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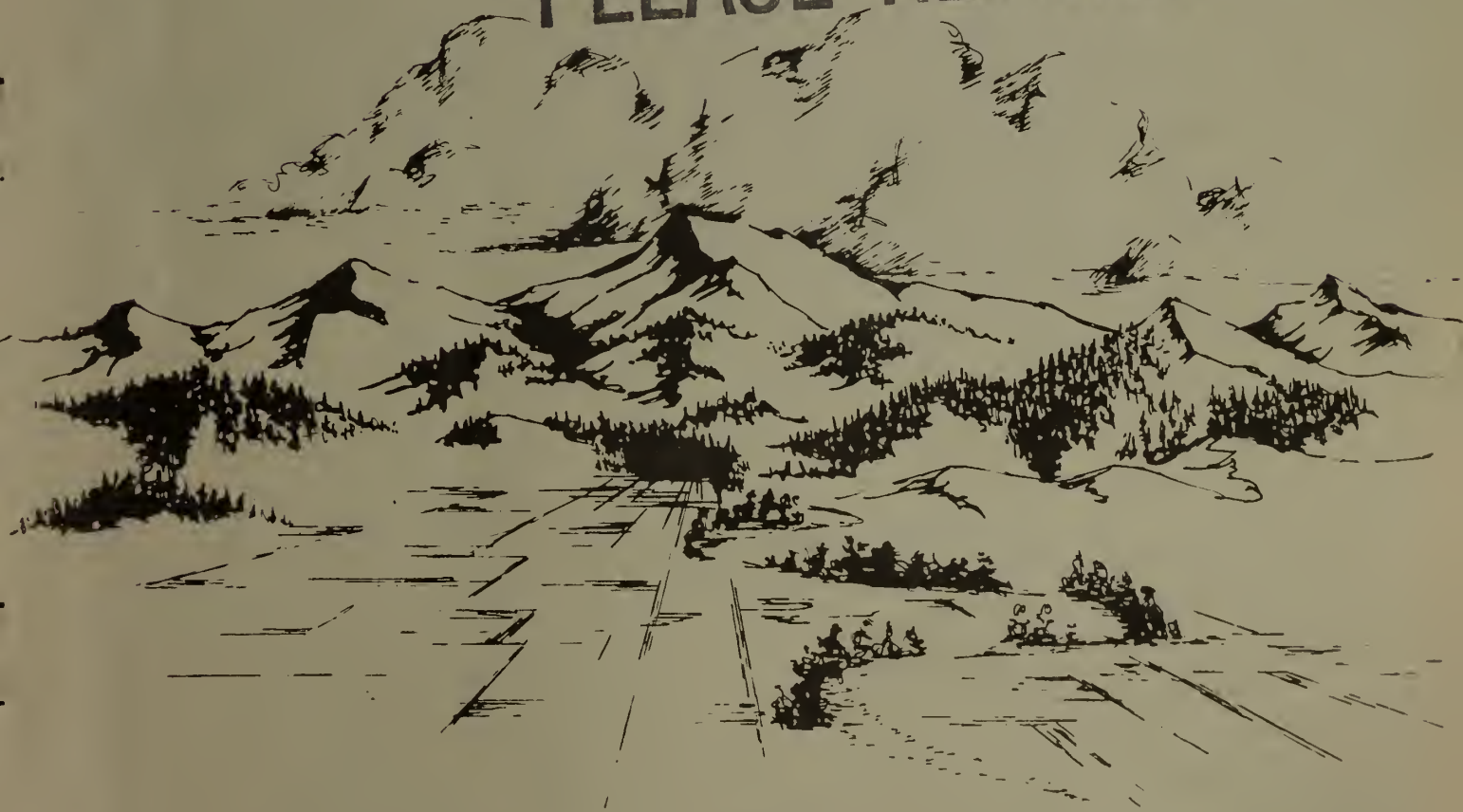
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An Analysis of The Highway System In Eastern Montana

By: David Fargen

The Economic Development Association of Eastern Montana

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Resources Development Internship Program
Western Interstate Commission for Higher Education

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Fargen, David M

An analysis of the highway system in
Eastern Montana / David M. Fargen.--
Boulder, CO : Western Interstate Commission
for Higher Education, 1976.
(86)p.

1. Highways, - Montana. I. Economic De-
velopment Association of Eastern Montana.
II. Western Interstate Commission for Higher
Education. Resources Development Internship
Program. III. Title.

The ideas and opinions expressed in this report are those of the author. They do not necessarily reflect the views of the WICHE Commissioners or WICHE staff.

The Resources Development Internship Program has been financed during 1975 by grants from the Economic Development Administration, the Jessie Smith Noyes Foundation, the National Endowment for the Humanities, the Wyoming Office of Manpower Planning; and by more than one hundred and fifty community agencies throughout the West.

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AN ANALYSIS OF THE HIGHWAY SYSTEM
IN EASTERN MONTANA
A PROJECT SPONSORED
by
THE ECONOMIC DEVELOPMENT ASSOCIATION
OF
EASTERN MONTANA
and coordinated by
THE RESOURCES DEVELOPMENT INTERNSHIP PROGRAM
of
THE WESTERN INTERSTATE COMMISSION
FOR HIGHER EDUCATION

Summer, 1976

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I N T R O D U C T I O N

The dimensions of the 18 counties which comprise eastern Montana, roughly one-third of the total state area, and approximately 51,000 square miles, dwarf the size of many of the states in the Nation. The area is larger than either of the states of New York, Ohio, or Pennsylvania. Geographically, the 18 eastern Montana counties engulf a land mass similar in size to the State of Missouri.

The population of eastern Montana is approximately 95,000 people, which yields a population density of 1.86 people per square mile. Aside from Alaska and regions of the desert Southwest, eastern Montana remains one of the least densely populated areas in the United States.

The livestock industry is the primary source of income in the 18 counties. The climate and terrain compliment the agricultural needs in the area, as is demonstrated by the population dispersion. 60 percent of the 95,000 people are settled in rural areas. Of the 31,700,000 acres of land, 79 percent is range and pasture and 18 percent is cropland. Land ownership is 68 percent private, 25 percent federal, and 7 percent state.

With its vast proven reserves of subbituminous and lignite coal, eastern Montana will be increasingly relied upon to help facilitate the energy needs of the Nation. Although the recent developments in the coal industry have spurred economic activity throughout the State's impacted areas, serious attempts to foster the fundamental development of eastern Montana have been negligible.

The underlying and most serious assumption of this study is that the economic development of this rural agricultural region is contingent upon the development and improvement of the regional network of primary and secondary highways.

The advanced deterioration and obsolescence of eastern Montana's highway network has led the Economic Development Association of Eastern Montana to

undertake a study of this situation. The findings of the twelve week comprehensive project are contained in this report.

The purpose of this project is to investigate the prospects for advanced highway development in eastern Montana. The operational characteristics of this project are to: 1) analyze and compare the highway system in eastern Montana with that of other parts of Montana and the surrounding states; 2) to document and demonstrate the need for improvement of highways in eastern Montana; 3) to investigate alternatives for improving the highways in eastern Montana; and 4) to develop a plan for public commitment to the overall policy of highway improvement in eastern Montana.

O V E R V I E W

It is the author's intention to incorporate four basic components into this report. The first topic will be a discussion on the national outlook on rural highway transportation. This section will consider the Federal government's role in developing a network of highways to service rural America. Because of a decline in transportation services throughout rural America, questions regarding people vs. product transportation; regional trends in highway transportation; and, implications of Federal legislation will be addressed.

The second topic will be a technical comparative analysis of the highway transportation resources, i.e., construction, maintenance, funding, etc..., available to Montana and three of its border states; North Dakota, South Dakota, and Wyoming.

Part three will discuss the implications of State and National transportation policies, to determine the significant role these policies play on the development of eastern Montana's highways.

Part four will demonstrate a summary of findings; discuss various conclusions to be made, resulting from this study; and last, contribute policy and procedural recommendations to the sponsors of this report.

A C K N O W L E D G E M E N T S

A project of this size and scope requires a high degree of communication and cooperation in the gathering of pertinent research data.

Special thanks go to Mr. Byron Roberts of the Department of Community Affairs, in Helena. His suggestions and encouragement have been very helpful.

For their high degree of cooperation, I would like to thank Mr. H. J. Anderson, Director; Mr. Paul Devine; Mr. Jim Hahn; and Mr. Bruce Ressel of the Montana Department of Highways. In addition, the Highway Departments of North Dakota, South Dakota, and Wyoming are recognized for their valuable contributions of primary data sources.

Dr. Robert Bell, President of the Economic Development Association of Eastern Montana, and the EDAEM board members and delegates have offered helpful suggestions.

Dr. James E. Bostic, Jr., Acting Assistant Secretary for Rural Development has been extremely helpful in providing research material. Mr. John R. Myers, Director of the Current Research Information System in Washington, D.C., conducted a computer search which generated a substantial amount of primary source research documents which are cited throughout this report.

Other valuable research documentation was provided by ACTION, Region VII Office, Denver, Colorado; Department of Transportation, Federal Highway Administration, Washington, D.C.; National Research Council, Transportation Research Board, Washington, D.C.; United States Department of Agriculture, Economic Research Service, Washington, D.C.; Department of Community Affairs, Highway Safety Division, Helena, Montana; Cooperative Extension Service of Maine, Orno, Maine; Council of State Governments, Western Office, San Francisco, California; Department of Economics, Kentucky State University, Lexington, Kentucky; Highway Users Federation, Denver, Colorado, and Billings, Montana; National Area Development Interchange, Rockport, Texas; and Western Inter-

state Commission for Higher Education, Boulder, Colorado.

Mrs. Lana Davidson deserves special thanks for her help in typing the manuscript. Ms. Donita Kordonowy helped to reproduce charts and graphs.

Deserving foremost thanks for his guidance and contributions to this report is Mr. Calvin Oraw of the Montana Cooperative Extension Service. His recommendations on information sources and review of the progress of this project have helped to structure this study.

S E C T I O N I

NATIONAL OUTLOOK ON RURAL HIGHWAY TRANSPORTATION

The U. S. Federal Government's role in road construction dates to 1806 when Congress appropriated funds for the improvement of the National Pike in western Maryland. Federal participation in road construction throughout the lapse of the 19th Century took the form of "inquiries in regard to the systems of roads management throughout the U. S." and "investigations in regard to the best methods of road making." A significant input which prompted this Congressional action was that of the farmers who attempted to secure adequate farm-to-rail services.

The first step in general road improvement by the U. S. government was taken in 1912 when \$500,000 was authorized to pay for "one-third of the cost of improving mail route roads; and to study the possibilities of Federal aid for road construction."

The result of this study was the passage of the Federal-aid Road Act of 1916. This act set the foundation for a system of Federal-State cooperation in the construction of roads throughout the Nation. This basic Federal-State relationship exists today.

ROAD SYSTEM ORGANIZATION

There are 3.8 million miles of roads in the U. S. These roads are divided into administrative systems based on political jurisdiction boundaries. Road system administration is the responsibility of the Federal, state, county, and municipal governments throughout the Nation.

The administrative classification of highways identifies roads by the political jurisdiction which owns and maintains them. The classification also denotes roads upon which Federal funds may be spent. The latter comprise the network of public roads which are referred to as Federal-aid Systems.

The roads of the greatest National importance make up the Federal-aid Systems. Currently, there are three types of highway systems that can apply for Federal assistance; they are the primary, secondary, and urban roads. These three road systems comprise about 25 percent of the Nation's roadways. At the same time, these 915,000 miles of roadway carry approximately 75 percent of all motor traffic.

The Primary System which includes Interstate routes, spans 256,900 miles, 7 percent of the total mileage, and carries 49 percent of motor vehicle traffic. The Federal-aid Secondary System totals 642,000 miles, about 17 percent of the total. Secondary highways which range from 6 percent to 30 percent of the total highway mileage in the individual states, carry approximately 18 percent of all travel. The Federal-aid Urban System, established in 1970, includes 15,600 miles of principal urban arterial streets and highways. The urban system provides for almost 6 percent of all motor travel, yet is less than one-half percent of the total road mileage.

ADMINISTRATIVE SYSTEMS

Each State has a state highway system which is constructed and maintained by the highway department or department of transportation. State highway systems range from about 6 percent of the total road mileage in North Dakota to about 30 percent in West Virginia. The average for all states is 21 percent of the total road mileage. State highways are generally the most important rural and urban roads. These roads connect with the most important roads in adjacent states.

There are approximately 2.25 million miles of highways not on state systems, which service rural areas. These roads are constructed and maintained by counties and similar governmental units.

FEDERAL AID HIGHWAY SYSTEM - RURAL TYPES

Interstate System

The purpose of the National System of Interstate and Defense Highways is to serve as a network of the Nation's most important roads. When completed in the 1980's, the 42,500 miles of road will serve all of the contiguous 48 states, and connect nearly every city of more than 50,000 population. The Interstate System has been the major benefactor of the Highway Trust Fund. The handsome 90 percent Federal matching formula has prompted states to work on the Interstate System on a priority basis.

Although the total Interstate System is approximately 90 percent complete, there remain a few states that lag behind in construction. Inclusion 1 shows the relative progress of the states in completing their portions of Interstate, as of late 1974.

The user benefits of the Interstate System are estimated at \$107 billion, or nearly one half times greater than their cost. Among the quantifiable benefits are \$45.8 billion in operating cost savings; \$15.8 billion in accident cost savings; and \$45.8 billion in commercial vehicle time savings. Inclusion 2 shows the dollar savings for controlled access, four-lane highway users on a 66 mile section of road.

Rural - Non-Interstate

Nationally, there are 3.2 million miles of rural roads that link farms, forests, parks, and rural industry with each other and with urban places. Of the total mileage, about 70 percent is controlled by local governments. Of this mileage, about one-fourth is unsurfaced and half is either soil, gravel, or stone.

With the completion of the Interstate System, carrying 20 percent of all rural traffic, serious attention must be placed on the improvement of other

Inclusion 1

STATUS OF INTERSTATE HIGHWAY SYSTEM, SEPTEMBER 30, 1974

	Preliminary Status or Not Yet in Progress	Work Progress Not Open to Traffic	Total Open to Traffic	Total Designated System Mileage
Alabama	18.70	174.80	704.90	898.40
Arizona	1.00	146.79	1,024.80	1,172.59
Arkansas	-----	17.80	508.54	526.34
California	4.70	202.60	1,709.80	2,287.10
Colorado	45.21	121.59	809.65	976.45
Connecticut	40.21	29/06	278.02	347.29
Delaware	-----	11.47	29.14	40.61
Florida	30.60	365.80	1,010.36	1,406.76
Georgia	26.70	223.63	903.01	1,153.34
Hawaii	-----	30.10	21.45	51.55
Idaho	4.62	52.77	553.74	611.13
Illinois	16.68	301.26	1,409.70	1,727.64
Indiana	14.30	89.19	1,025.93	1,129.42
Iowa	55.62	60.97	672.07	788.66
Kansas	-----	39.40	781.80	821.20
Kentucky	-----	123.69	613.30	736.99
Louisiana	40.01	187.08	490.95	718.04
Maine	-----	25.77	285.92	311.69
Maryland	14.68	16.60	328.13	359.41
Massachusetts	20.95	10.07	418.87	449.89
Michigan	45.90	105.70	1,024.71	1,176.31
Minnesota	14.47	208.64	696.01	919.12
Mississippi	-----	58.00	625.20	683.20
Missouri	-----	158.30	988.60	1,146.90
Montana	24.58	210.04	954.04	1,188.66
Nebraska	-----	28.12	452.61	480.73
Nevada	-----	91.79	442.76	534.55
New Hampshire	-----	21.45	193.07	214.52
New Jersey	14.80	82.60	287.20	384.60
New Mexico	-----	79.82	919.48	999.30
New York	68.92	88.11	1,176.81	1,333.84
North Carolina	40.89	181.91	619.39	842.19
North Dakota	-----	48.20	523.13	571.33
Ohio	7.42	125.97	1,299.27	1,532.66
Oklahoma	-----	29.19	780.15	809.34
Oregon	21.07	17.74	696.02	734.83
Pennsylvania	13.27	122.67	1,430.78	1,566.72
Rhode Island	23.76	6.89	68.34	98.99
South Carolina	42.28	92.75	623.01	758.04
South Dakota	-----	111.19	567.77	678.96
Tennessee	-----	203.10	842.20	1,045.30
Texas	15.66	457.54	1,697.11	3,170.31
Utah	-----	283.33	653.81	937.14
Vermont	-----	50.53	269.85	320.38
Virginia	40.17	181.85	841.84	1,063.86
Washington	70.62	72.59	618.70	761.91
West Virginia	12.68	96.06	402.66	511.40
Wisconsin	83.38	21.73	472.84	577.95
Wyoming	-----	121.89	791.70	913.59
District of Columbia	9.36	8.03	12.16	29.55
Pending	-0.68*	-----	-----	-0.68*
TOTAL	882.53	5,596.17	36,021.30	42,500.00

*The minus mileage reserve results from System measurements. The final mileage measurements will provide an adequate reserve for all designated routes on the System.

CALCULATION OF DOLLAR VALUE TIME SAVINGS TO AUTOMOBILE
USERS RESULTING FROM ELIMINATION OF 17 SIGNALIZED
INTERSECTIONS-AT-GRADE IN 66 MILES OF 4-LANE DIVIDED HIGHWAY

Inclusion 2

Item	Class Interval of Hourly Traffic Volume				
	0 To 400	400 to 800	800 to 3,000	Over 3,000	Total or Average
Percentage distribution	2.6	15.0	81.9	0.5	100.0
Nominal speed, mph	57	55	42	37	---
Average stopped delay time at rural intersections, min	0.210	0.210	0.210	0.210	0.210
Excess time consumed in stop- ping & resuming speed, min	0.251	0.251	0.201	0.170	---
Total time per vehicle stopped, min	0.461	0.461	0.411	0.380	---
Saving per vehicle stop eliminated at 2.37 cents per min, cents	1.093	1.093	0.974	0.901	---
Average per passage (30 per- cent of vehicles stopped), cents:					
Unweighted	0.328	0.328	0.292	0.270	---
Weighted by hourly volume	0.009	0.049	0.239	0.001	0.298
Value for 17 intersections eliminated in 66 miles, cents	---	---	---	---	5.066
Average benefit per vehicle- mile, cents	---	---	---	---	0.07676
Vehicle-miles of travel in year, millions	---	---	---	---	345
Dollar value of annual time benefits	---	---	---	---	\$264,822

Source: The Highway Fact Book, Highway Users Federation, 1975

rural roads that carry 80 percent of all rural traffic.

Rural roads have been improved in recent years, but a 1970 report by the States, claimed that well over three-fifths of all arterial and collector roads were identified as deficient. Furthermore, over 50 percent of all rural collector roads were considered inadequate to handle continuing truck traffic.

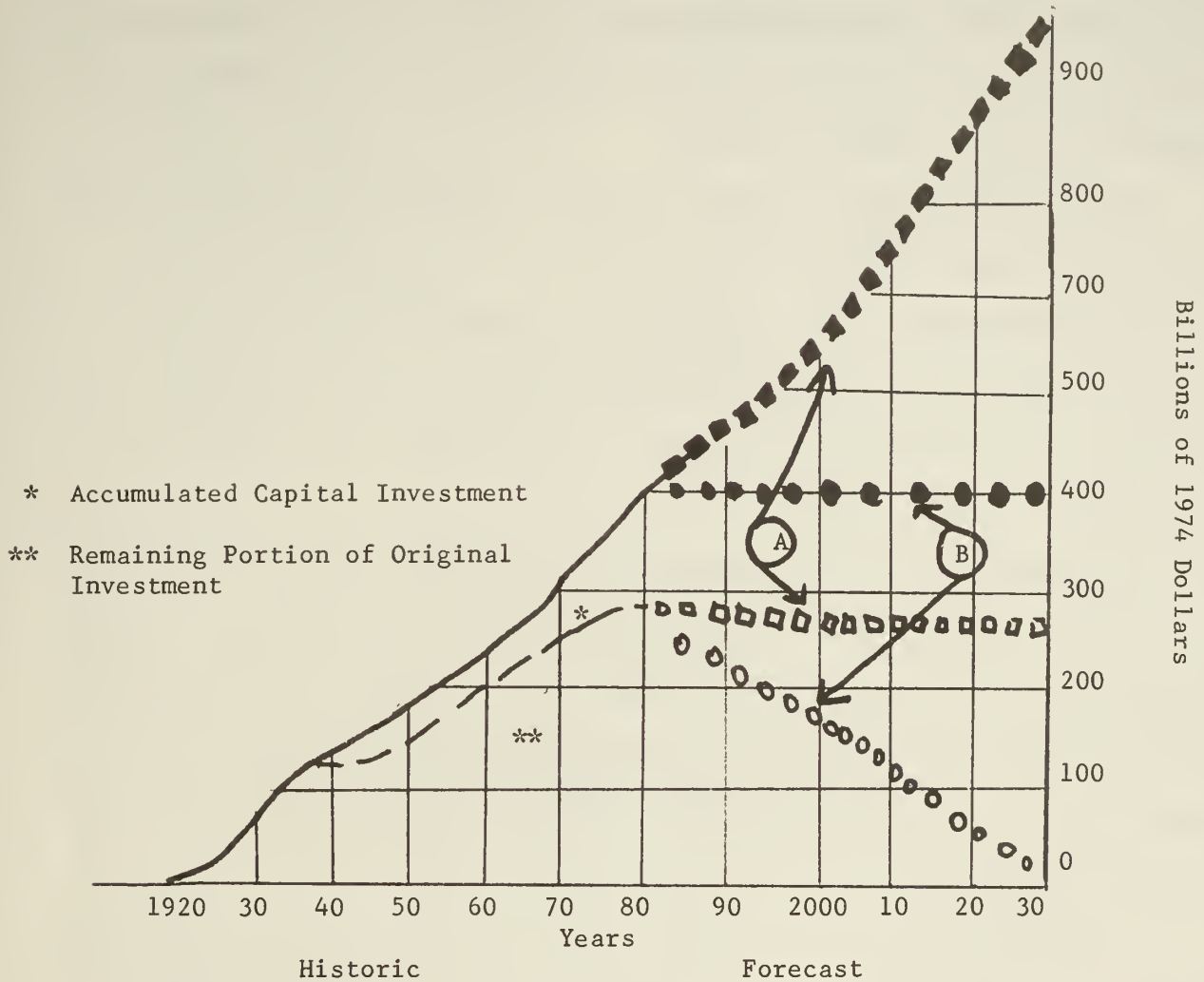
Nearly two-thirds of the rural arterial highway mileage was rated by engineers as being very inadequate on safety and mobility standards for 1970. Rural arterial highways total about 261,000 miles. The 1974 National Highway Needs Report of the Federal Highway Administration estimated that about \$111 billion at 1971 prices would be required from 1973 to 1990 to provide for adequate improvements for present and future traffic needs. Inclusion 3 demonstrates that investment requirement.

Rural collector roads total about 700,000 miles. About 30 percent are unpaved, and the same amount have only light surfacing. All rural collector roads are basically unsuited for heavier truck loads particularly during seasonal weather. There are serious ramifications which coincide with deficient rural mileage, for example, traffic fatalities in rural areas were twice the number in urban areas in 1973, yet there was less travel on rural roads.

In spite of the increasing needs for rural highway development, the Federal Highway Administration points out that "our highway network is deteriorating at a rate of 50 percent faster than we are rebuilding it." Inclusion 3 shows this grim statistic graphically. Since 1914, about \$161 billion has been spent on highways, not including rights of way, or the Interstate System. This is equivalent to \$400 billion in 1974 dollars. But only \$270 billion worth remains in service, and this amount is already 50 percent deficient. If no additional funds were invested, the system would lose all of its remaining value by the year 2030.

Inclusion 3

INVESTMENT IN
HIGHWAY CONSTRUCTION
(Non-Interstate)



Inclusion 3 - Annual investments in the nation's highway system other than Interstate have been accumulating steadily since the beginning of federal aid about 1916. Since 1940, however, the portion of the original investment has declined due to many reasons including abandonment, replacement and retirement of outmoded facilities. In the future, the remaining portion of original investment will be reduced sharply unless adequate funding is provided. Lines A show the annual expenditures required merely to retain the remaining portion of original investment at its present amount. Lines B show that if the accumulated original investment remains at the present amount with no additional funding, the remaining portion of original investment would decrease rapidly. The nation's road system would be virtually useless by 2030.

Source: Highway Users Quarterly, Spring, 1975

Federal - State Highway Programs

There are four basic steps involved in the Federal-State highway program. The first step in Federal participation includes the enactment of authorizing legislation. These Federal-aid Highway Acts create the new programs; revise existing ones; call for special projects and reports; and set upper limits for funding each of the highway programs.

After authorizations have been approved, and prior to six months before the start of each fiscal year, the Department of Transportation apportions the authorized highway funds to the states. These funds are distributed to the various highway system programs including the Interstate, rural primary, rural secondary, and urban extension systems. For a graphic illustration, see inclusion 4.

The Federal-aid Highway Program operates under the concept of "contract authority", which allows spending commitments to be made in advance of cash availability so that the states can begin to let contracts for construction when the apportionments are made. Apportioned funds are available to the states for work on Federal-aid Systems during the fiscal year of apportionment, plus two years thereafter.

An appropriations act is not necessary to incur obligations in the highway program. Rather, the annual appropriations act for the U. S. Department of Transportation makes funds available from the Highway Trust Fund to liquidate obligations that have already been incurred. Because of recent spending ceilings that have been imposed by the Executive Branch, actual spending has fallen short of Congressional authorizations. See inclusion 5. As a result, states have not been allowed to obligate the entire amount of their appropriations. This action does not deny the states use of the authorization, rather it extends the time period within which that money is to be spent.

Administratively, each state submits its own priorities and plans for

Inclusion 4

Authorizations for Federal-aid Highway
Programs-Continuing Major System
Programs-Fiscal Year 1975
(in millions)

<u>Program</u>	<u>Amount</u>
Interstate	\$3,050
Rural Primary	715
Rural Secondary	400
Primary & Secondary Urban Extensions	300
Urban Systems	<u>800*</u>
Total Major Programs	\$5,265

*In fiscal 1975, up to \$200 million may be used for purchase of buses, at local option.

Total Federal Authorizations-Highway
and Safety Programs-Fiscal Year 1975
(in millions)

<u>Program</u>	<u>From Highway Trust Funds</u>	<u>From General Funds</u>
Major Systems	\$5,265.00	-----
Highway Safety	763.00	-----
Other	<u>455.67*</u>	<u>\$367.83**</u>
Total	\$6,483.67	\$367.83

*Includes programs such as forest highways, public lands highways, Alaskan assistance and economic growth center development highways.

**Includes programs such as forest development roads and trails, Indian reservation roads and bridges, and park roads and trails.

Source: The Highway Fact Book, Highway Users Federation, 1975.

Inclusion 5 - Comparison of Federal-aid Highways Funds Apportioned,
and Obligational Authority Fiscal Year 1975
(in millions)

State	Apportionments	Obligational Authority
Alabama	\$ 109.788	\$ 80.246
Alaska	69.135	66.486
Arizona	92.613	68.766
Arkansas	54.641	40.202
California	424.043	314.007
Colorado	101.549	75.190
Connecticut	116.390	86.605
Delaware	27.317	20.216
Florida	169.684	125.088
Georgia	135.410	99.382
Hawaii	43.454	32.357
Idaho	39.799	29.217
Illinois	268.685	199.169
Indiana	98.860	72.275
Iowa	79.256	58.205
Kansas	79.464	58.474
Kentucky	86.303	62.976
Louisiana	133.737	98.832
Maine	33.502	24.384
Maryland	153.685	113.941
Massachusetts	147.281	109.657
Michigan	206.228	152.438
Minnesota	129.585	95.522
Mississippi	61.131	44.755
Missouri	124.168	91.063
Montana	63.141	46.720
Nebraska	47.735	35.163
Nevada	35.734	26.465
New Hampshire	27.693	20.356
New Jersey	154.406	114.720
New Mexico	54.935	40.608
New York	301.971	223.310
North Carolina	118.033	85.837
North Dakota	38.347	28.269
Ohio	207.372	151.899
Oklahoma	64.499	47.316
Oregon	114.162	84.404
Pennsylvania	271.997	200.509
Rhode Island	40.301	30.038
South Carolina	58.860	42.233
South Dakota	40.245	29.548
Tennessee	94.090	68.709
Texas	293.280	215.185
Utah	56.800	42.084
Vermont	24.154	17.836
Virginia	185.536	136.971
Washington	153.074	113.096
West Virginia	91.303	67.651
Wisconsin	96.577	69.495
Wyoming	38.012	28.091
District of Columbia	78.434	58.581
Puerto Rico	22.101	16.453
Reserve		339.000
TOTAL	\$5,758.500*	\$4,600.000

*Apportionments do not equal the authorization levels of funds to be used by the states (\$6.116 billion in fiscal year 1975) because funds for some programs, such as bridge reconstruction, are allocated by project (\$216 million in fiscal 1975) and other funds are held out for administration and reserves (\$141.9 million in fiscal 1975).

Federal-aid system projects. When these plans are approved by the Department of Transportation, the state enters into contracts for construction work. The Federal share of the debt is 90 percent for the Interstate System, and 70 percent for primary and secondary systems. Eleven Western states, including Montana, have slightly higher matching ratios due to their large amounts of Federal land.

HIGHWAY FINANCING

Highway Trust Fund

In 1956, the Highway Revenue Act was enacted for the purpose of funding Federal highway construction and maintenance projects. Currently, the Highway Trust Fund is one of 15 major trust funds in the U. S. budget, created for the express purpose of funding national priority programs.

Automotive user taxes are used to generate funds which comprise the Highway Trust Fund. Of the total trust fund receipts over the past 20 years, trucks and buses, nearly 17 percent of all motor vehicles, have accounted for over 40 percent of the total receipts, due to special fees which are assessed to those carriers for their proportionately greater use of roads. Inclusion 6 illustrates the various tax bases as well as the net yield per item. Similar to state taxes that are earmarked for highway construction and maintenance, the gasoline tax for highway use is the substantial revenue generator.

Today, the Highway Trust Fund is used for financing more programs than it did when created. The Federal-aid Highway Act of 1973 provided that up to \$200 million of the Highway Trust Fund could be used for 1975 urban mass-transit systems, with the express purpose of making funds available for the purchase of mass-transit facilities, e.g., buses, terminals, etc... In fiscal year 1976, the entire \$800 million budget for urban highway systems will be available for the same purpose.

HIGHWAY USER TAXES SUPPORTING THE HIGHWAY TRUST FUND

	Rate	Net Yield -Fiscal Year 1974 (in millions)	Percent of Total
Gasoline*	4 cents per gallon	\$3,906.614	62.4
Diesel Fuel*	4 cents per gallon	394.681	6.3
New trucks, buses and trailers	10 percent of manufacturer's wholesale price. Vehicles of 10,000 pounds or less gross weight, school and transit buses are exempt	614.132	9.8
Tires	10 cents per pound for high- way type, 5 cents per pound for others	837.717	13.4
Tubes	10 cents per pound	33.382	0.5
Tread rubber	5 cents per pound if for highway type tires only	24.131	0.4
Heavy vehicle use	\$3 per 1,000 pounds annually on total gross weight of veh- icles rated at more than 26,000 pounds gross weight	225.193	3.6
Parts & accessories	8 percent of manufacturer's wholesale price of truck and bus parts and accessories	130.455	2.1
Lubricating oil	6 cents per gallon in highway use. All non-highway use re- fundable	94.005	1.5
Total		<hr/> \$6,260.310	<hr/> 100.0

*highway use only

Inclusion 6

Taxes on highway users at all levels of government provide more than 70 percent of government receipts for highways. In 1956, the year the Federal Highway Trust Fund accounted for 23 percent of the total receipts for Federal highway assistance programs. State highway user taxes generate the largest amount of highway money, about 42 percent of the total receipts. Miscellaneous funds and general funds account for the remaining 35 percent of the funds available for highway use. Inclusion 7 graphically illustrates where highway money comes from.

A large portion of the highway user tax funds collected by the states are returned to local governments for highway work. Inclusion 8 graphically illustrates how highway money is spent. Capital outlay accounts for about half of the \$23.9 billion spent on highways in 1973. Maintenance accounts for about 25 percent of total highway disbursements, approximately 47 percent of disbursements from state and local taxes.

Administration, research, highway police and safety programs were responsible for 15 percent of disbursements, while bond interest and retirement accounted for the remaining 10 percent.

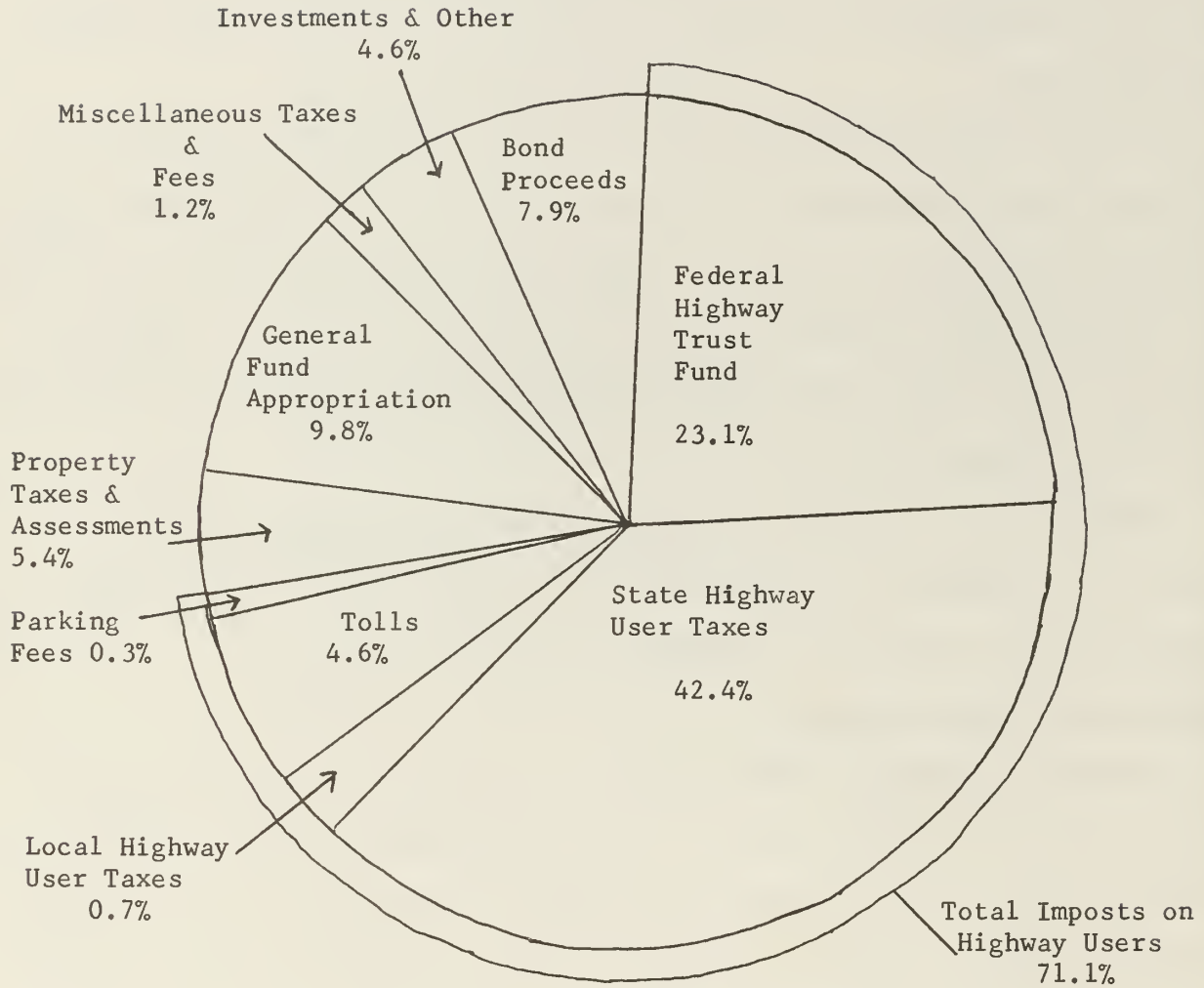
Inflation and Highway Programs

Although the amount of funds available for highways has more than quadrupled over the last 20 years, serious factors including improved road design and inflationary prices have diminished the highway purchasing power of the various governmental units. Inclusion 9 shows the effect of inflation on the purchasing power of total Federal-aid authorizations for the Interstate, primary, secondary, and urban systems.

As of September, 1974, the index of the price of Federal-aid highway construction stood at 209.7, more than double the 1967 base of 100. The 1974 highway dollar was worth 47.7 cents in 1967 dollars. The consumer price index for the same period stood at 151.9. In total, inflation accounted for 26.1 percent

Inclusion 7

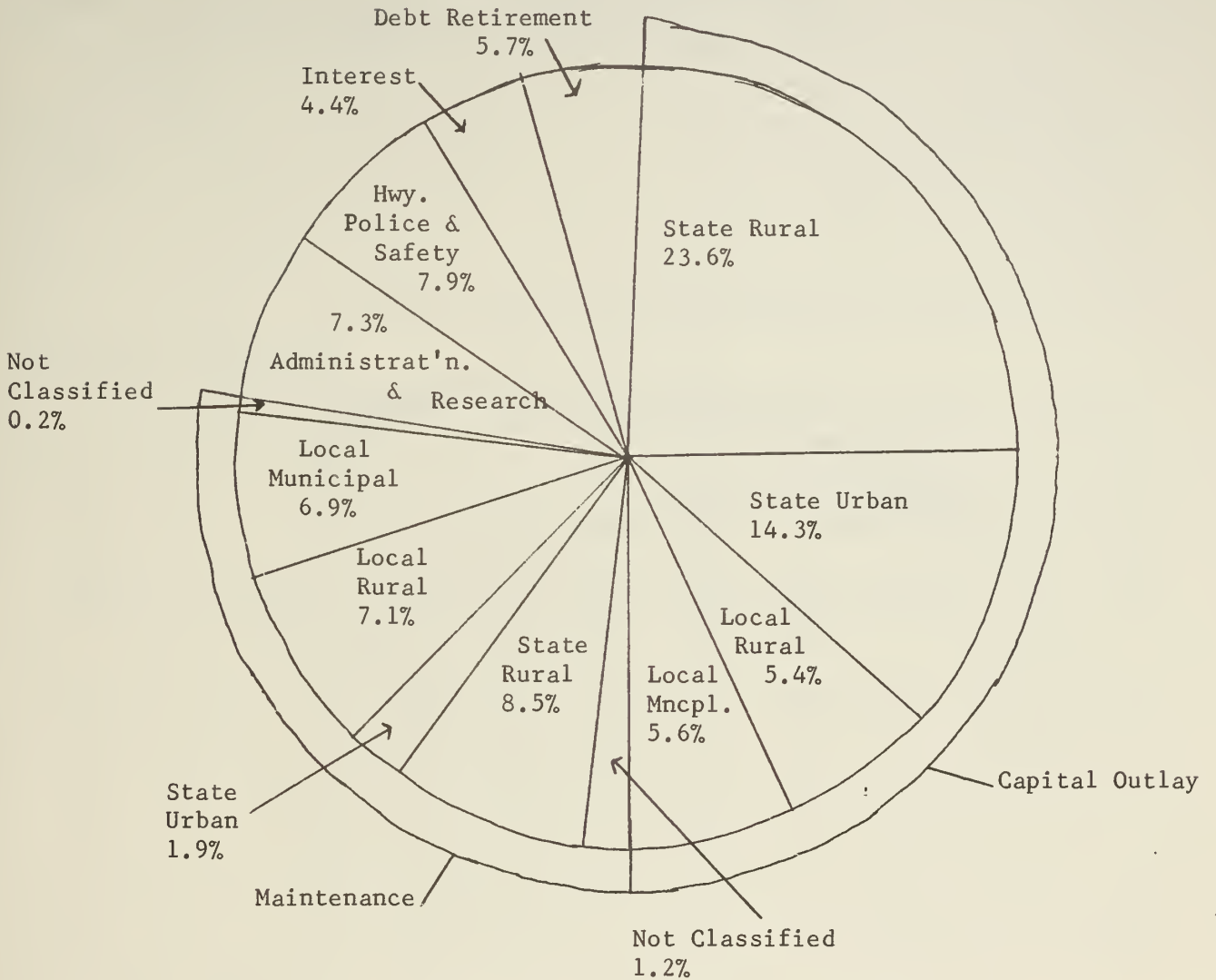
WHERE HIGHWAY MONEY COMES FROM
1973



Source: The Highway Fact Book, Highway User Federation, 1975

Inclusion 8

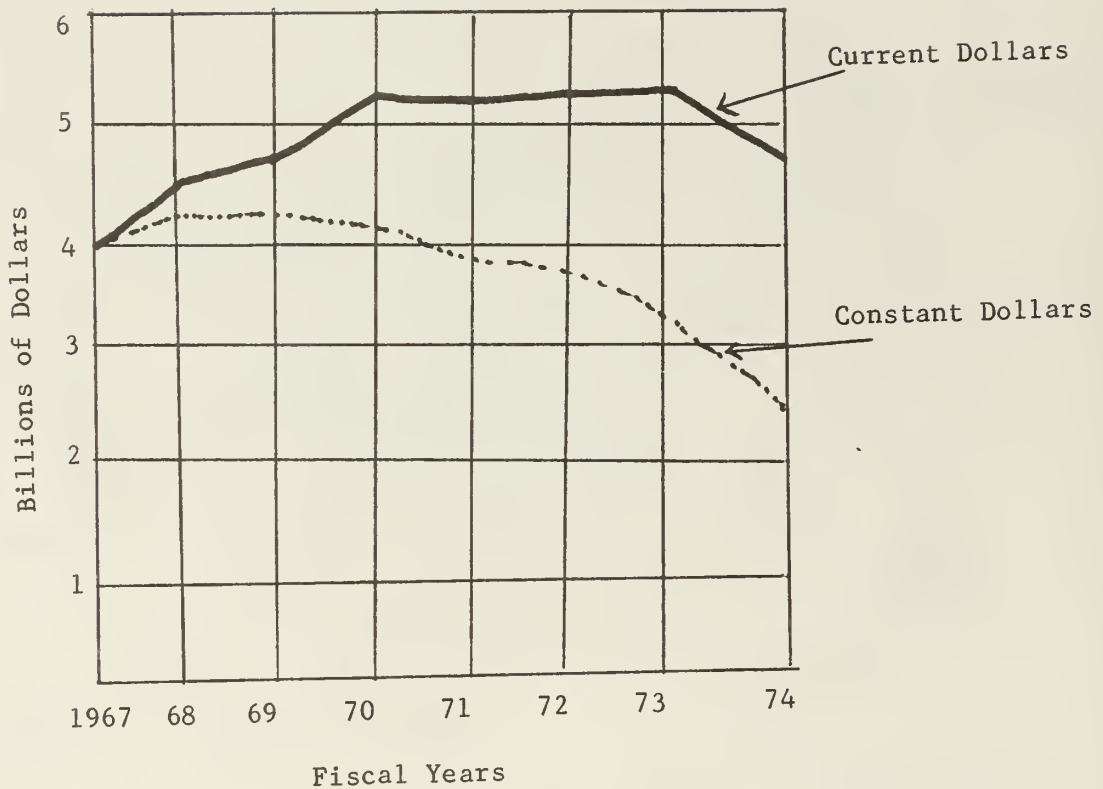
WHERE HIGHWAY MONEY GOES
1973



Source: The Highway Fact Book, Highway User Federation, 1975

Inclusion 9

AUTHORIZATIONS OF FEDERAL-AID HIGHWAY
FUNDS FOR INTERSTATE, PRIMARY
SECONDARY, AND URBAN SYSTEMS
1967 - 1974
IN CURRENT AND CONSTANT (1967) DOLLARS



Source: The Highway Fact Book, Highway User Federation, 1975

of the increase in costs of Interstate highways between 1961 and 1972. For non-Interstate Federal-aid highway programs, costs per contract mile went from \$84,500 to \$496,000 between 1961 and 1975.

Highway Benefits and Impacts

There are many benefits resulting from highway construction programs. The U. S. economy is intrinsically tied to the construction and transportation industries. Approximately 13 million jobs, or one out of six jobs, rely upon the use of the nation's roadways. This figure translates into about 17 percent of the gross national product. Almost 820,000 businesses are related to motor vehicles and their needs.

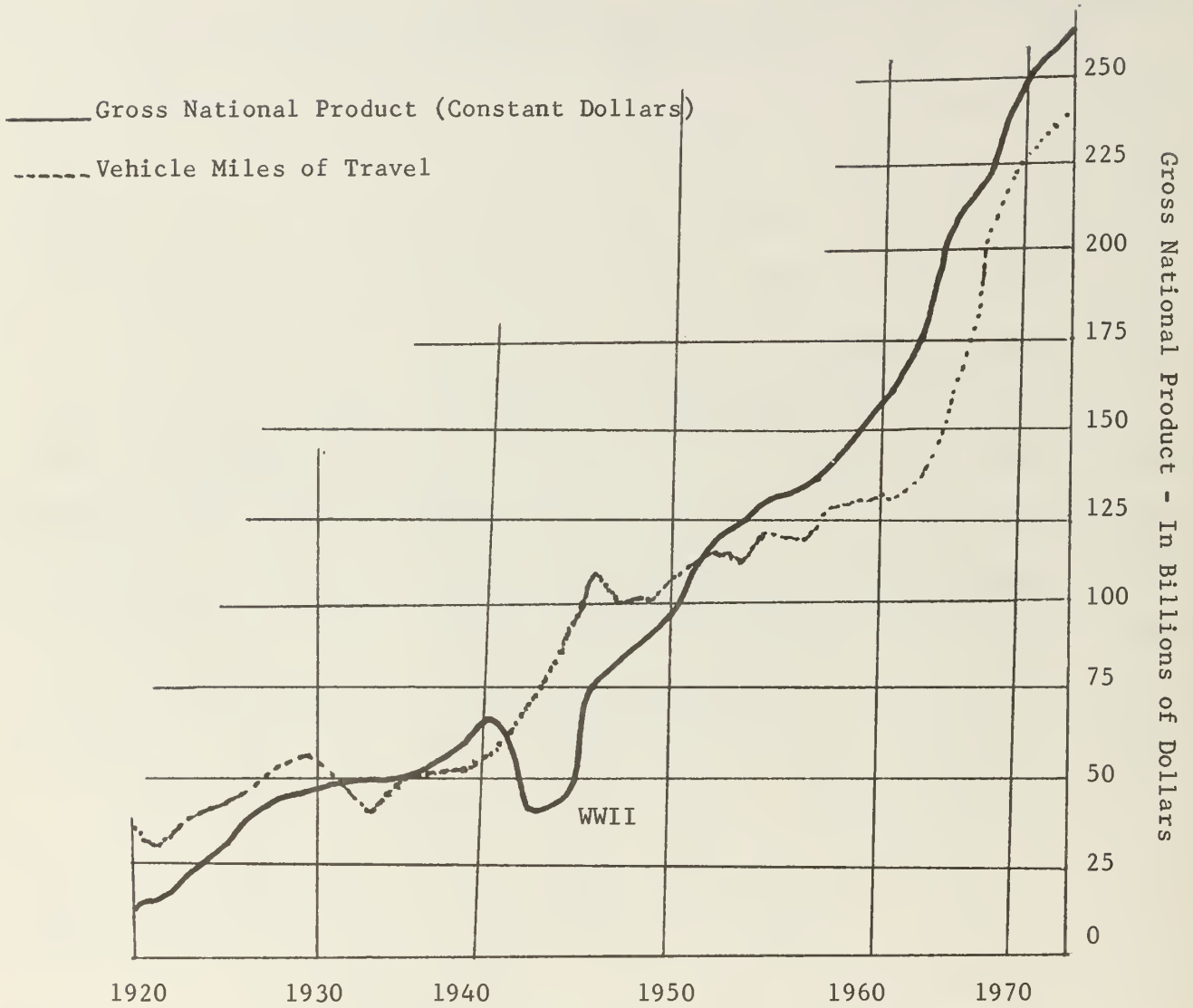
Various regional studies attest to trends that suggest economic development in terms of employment rates, industrial location, and agricultural commodities growth, is closely tied with the development of modern highway transportation. Inclusion 10 illustrates the direct relationship between growth in the gross national product and miles of travel. Because the U. S. economy is an integrated system, rural highways are of particular importance to the economy. Without an efficient network of rural highways, food prices can be expected to increase. Over 75 percent of all agricultural products are moved by truck. Inefficient roads result in multiple negative effects upon rural and urban populations. First, in the higher costs of shipping agricultural goods to commodity markets, and second, in higher average cost for finished products.

Social impacts resulting from highway development cannot always be expressed empirically, but highway use for recreation purposes has increased dramatically. In spite of fuel shortages and higher gasoline prices, National Park use statistics demonstrate an increase in tourist visits.

In light of the current energy shortages, cost-effectiveness of various modes of transportation are seriously considered. Inclusions 11 and 12 demonstrate the efficiencies of the various modes of travel. Current research

Inclusion 10

INDEX OF THE GROSS NATIONAL PRODUCT
AND VEHICLE MILES OF MOTOR VEHICLE
TRAVEL



Source: Highway Fact Book, Highway User Federation, 1975.

Inclusion 11

<u>Mode</u>	<u>Passenger Miles/Gallon</u>
1. Walk-in to rail transit, New York City	109.0
2. Walk to local bus, city of 3 million population	93.1
3. Small auto with 4 occupants	71.8
4. 10 occupant vanpool	70.0
5. Walk-in to rail transit, Chicago	70.0
6. Small auto, 3 occupants	55.1
7. Walk to local bus, city of 300,000 population	46.6
8. Standard auto, 5 occupants	44.9
9. Park and ride to rail transit, New York City	41.7
10. Dial-a-ride to express bus	39.8
11. Park and ride to rail transit, San Francisco(BART)	38.8
12. Small auto, 2 occupants	37.8
13. Standard auto, 4 occupants	36.7
14. Park and ride to rail transit, Chicago	35.6
15. Park and ride to express bus	34.6
16. Park and ride to commuter rail	30.6
17. Standard auto, 3 occupants	28.2
18. Kiss and ride* to rail transit, New York City	24.6
19. Kiss and ride* to rail transit, San Francisco(BART)	23.6
20. Kiss and ride* to rail transit, Chicago	22.3
21. Kiss and ride* to commuter rail	20.3
22. Kiss and ride* to express bus	21.9
23. Small auto, 1 occupant	19.3
24. Standard auto, 2 occupants	19.3
25. Standard auto, 1 occupant	9.9

*involves a round trip by car to the transit station
for each trip to and from work

Source: 1974 National Transportation Report, Department of Transportation,
1975.

Inclusion 12

<u>Travel Mode</u>	<u>10-Mile Travel Cost</u>
Automobile - 1 occupant	\$2.64
Rail transit - kiss and ride access*	2.52
Rail transit - walk access	2.46
Rail transit - park and ride access	2.13
Rail transit - bus access	1.66
Automobile - 1.6 average occupancy	1.65
Bus - exclusive lanes	0.78-2.25
Automobile - 2 occupants	1.32
Automobile - 3 occupants	0.88
Bus - conventional	0.86
Automobile - 4 occupants	0.66
Automobile - 6 occupants	0.44

*involves a round trip to the transit station
for each trip to and from work

Source: 1974 National Transportation Report, Department of Transportation,
1975.

programs funded through the Transportation Research Board use these statistics in an attempt to develop the most efficient use of the Federal transportation dollar.

Of utmost importance to Americans in rural areas is the availability of an efficient highway network for the purpose of moving agricultural commodities. The Interstate Commerce Commission reported in 1972 that inter-city ton-miles in the U.S. totaled 2.077 billion ton-miles. Of that total, 22.6 percent was carried on the nations highways. In comparison, highway freight was 50 percent more than in 1960.

The commodities market relies heavily on the trucking industry. The need for good farm-to-market roads is exemplified by the following statistics: More than one truck in six is farm related. Trucks haul all hogs to market; 99 percent of cattle; 98 percent of sheep; and 73 percent of fruit and vegetables.

Significant factors in the expansion of the agricultural commodities trucking industry have been the rapid abandonment in rail service to highly agricultural areas, and the relative flexibility and convenience offered by trucks. As the use of trucks for transporting agricultural goods increased, so too must the development and improvement of rural roads increase.

RURAL ROADS AND ALTERNATIVE TRANSPORTATION MODES

-ISSUES-

Rail Abandonment

In April, 1974, the House Subcommittee on Family Farms and Rural Development conducted hearings on the impact of transportation policies. Specifically, the issue of rail service to rural America was addressed.

A spokesman for the National Council of Farmer Cooperatives testified that "while farmers and their cooperatives want and need a healthy rail system, rail service is being abandoned in rural areas at an alarming rate for the purpose

of protecting rail industry profits." Inclusion 13 shows the decline in the service lines of the rail industry. This decline results from outright abandonment to the deterioration of lines. Many of the less profitable light service branches that connect rural communities are the direct malefactors of the abandonment policies. The Farmers Cooperative spokesman further testified that "The myth behind rail abandonment to rural communities is necessitated because of uneconomical lines is not justified. In recent years the railroads have been able to convey this image by combining for statistical purposes the earnings figures for all class I railroads nationwide." As a result, Department of Transportation spokesman characterized the railroads as a sick industry with a rate of return on equity of less than 2 percent.

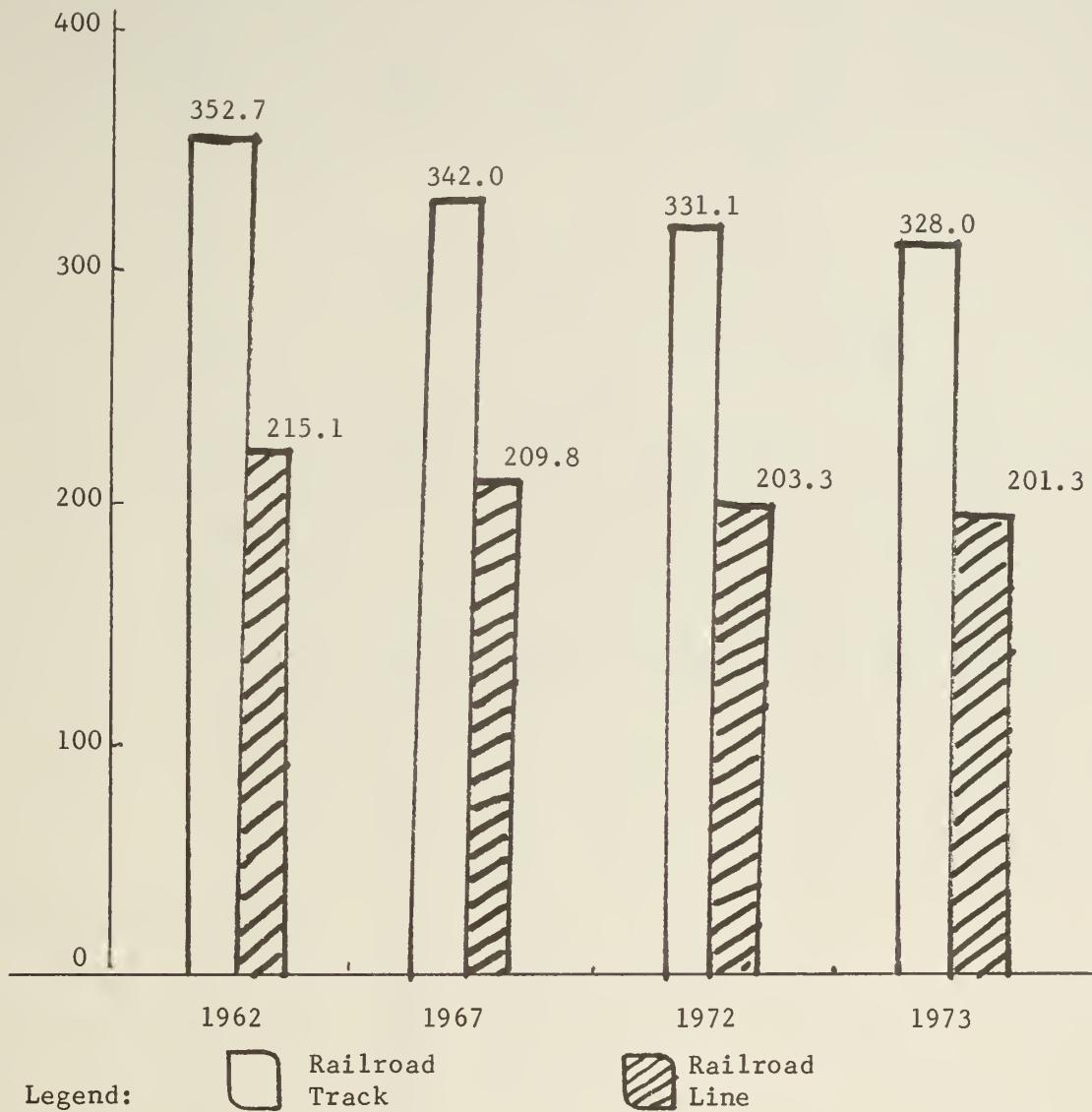
In 1973 however, the rail industry enjoyed its greatest year in terms of operating revenues, reaching a record high of \$14.8 billion. The previous high was reached in 1972. Inclusion 14 indicated the rates of return on net investments and shareholders equity for Western and Southern district railroads.

The crux of the rail abandonment issue lies with the 10 percent of the total track mileage which make up the light density branch lines. These lines service rural agricultural regions. When service to these areas is restricted, alternative transportation routes, viz., improved highways, must be provided to these areas to promote safe and efficient means of moving people and products. In the 1973 transportation policies hearings, the President of the South Dakota Farmers Union makes reference to this need.

The social and economic impact of rail abandonment, coupled with poor highway facilities raises serious questions regarding the future of sparsely populated agricultural regions. The impact of poor transportation facilities not only affects the rural agricultural economies, but significantly affects life in urban areas.

Inclusion 13

RAILROAD LINE AND TRACK MILEAGE IN
SELECTED YEARS: 1962-73



Source - Association of American Railroads, Yearbook of Railroad Facts, 1974.

Inclusion 14

RATE OF RETURN ON NET INVESTMENT

Western and Southern District Railroads

	Calendar year (percent)				
	1969	1970	1971	1972	1973
Southern district:					
Rate of return on net investment	4.17	4.50	4.93	5.42	5.63
Rate of return on shareholders' equity	4.67	5.16	5.48	6.10	-----
Western district:					
Rate of return on net investment	2.81	3.02	3.90	4.24	4.18
Rate of return on shareholders' equity	3.71	3.67	4.63	5.17	-----

Source: House of Representatives, Agricultural Committee; Family Farms & Rural Development Subcommittee Hearings, April, 1973.

FEDERAL NEEDS

Passenger Transportation

In the 1972 National Transportation Report, the needs study to 1990 in the Federal-aid primary systems were put at \$70 billion in rural areas of less than 5,000 population. The needs were \$8 billion in small urban areas of 5,000 to 50,000 population, and \$50 billion in urban areas of over 50,000 population.

On the Federal-aid secondary system, the same report indicated needs of \$69 billion in rural areas, \$4 billion in small urban areas, and \$25 billion in urban areas.

Overall needs in the period from 1970 to 1990 were placed at approximately \$331 billion in urban areas, and \$339 billion in rural areas. This represents roughly a 50-50 split in needs assessments.

From a standpoint of system mileage, the Nation's network of intercity highway mileage has not changed significantly over the past 10 years. Rural highway mileage under state control has increased 4.8 percent, 31,200 miles, while mileage under local control has decreased about 100,000 miles. Inclusions 15 and 16 and 16A demonstrate this point.

Trends in passenger mileage indicate that private modes of transportation will remain the predominant force in passenger movement. See Inclusion 17.

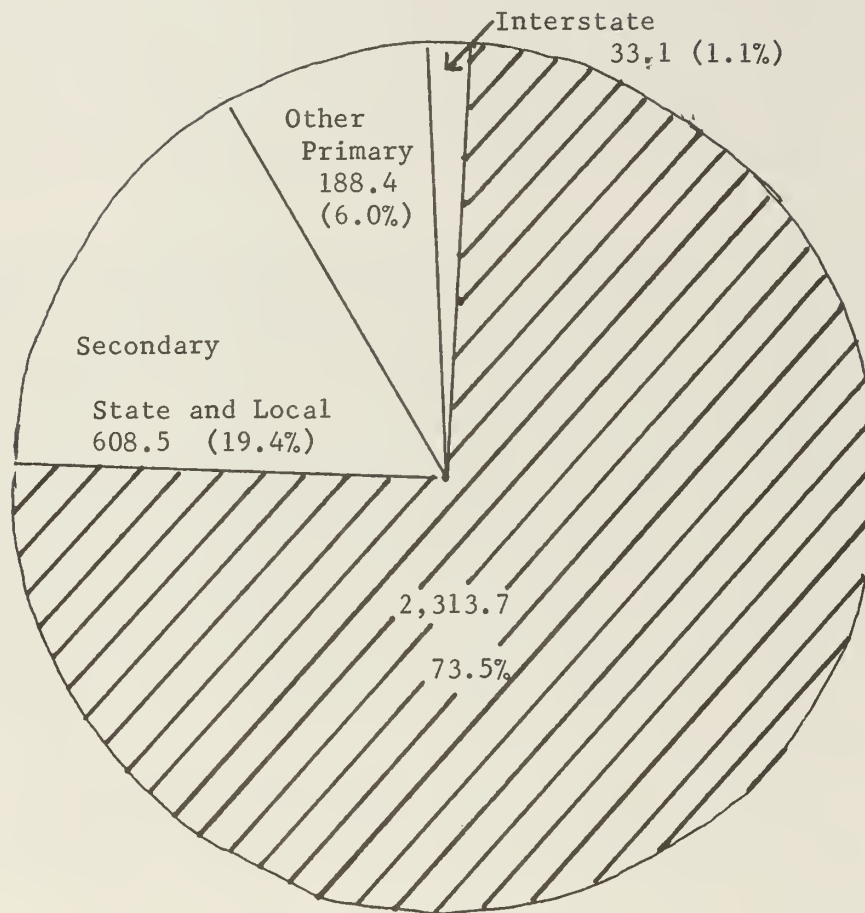
Product Transportation

Competition is vigorous in the inter-city movement of goods. With respect to tonnage-hauled, motor carriers have steadily gained importance in the freight industry. The erosion of the rail market share shows up in ton-miles hauled in inter-city carriers.

In 1962, rail carriers were the largest carriers in terms of ton miles, accounting for 37.0 percent of the total ton-mileage. In 1972, that percentage dropped to 33.5 percent. See Inclusion 18.


Inclusion 15


RURAL HIGHWAY MILEAGE AND
VEHICLE-MILES TRAVELED: 1972



ROAD HIGHWAY MILEAGE (thousands of miles)

Legend:


Federal aid 

Non-Federal aid 

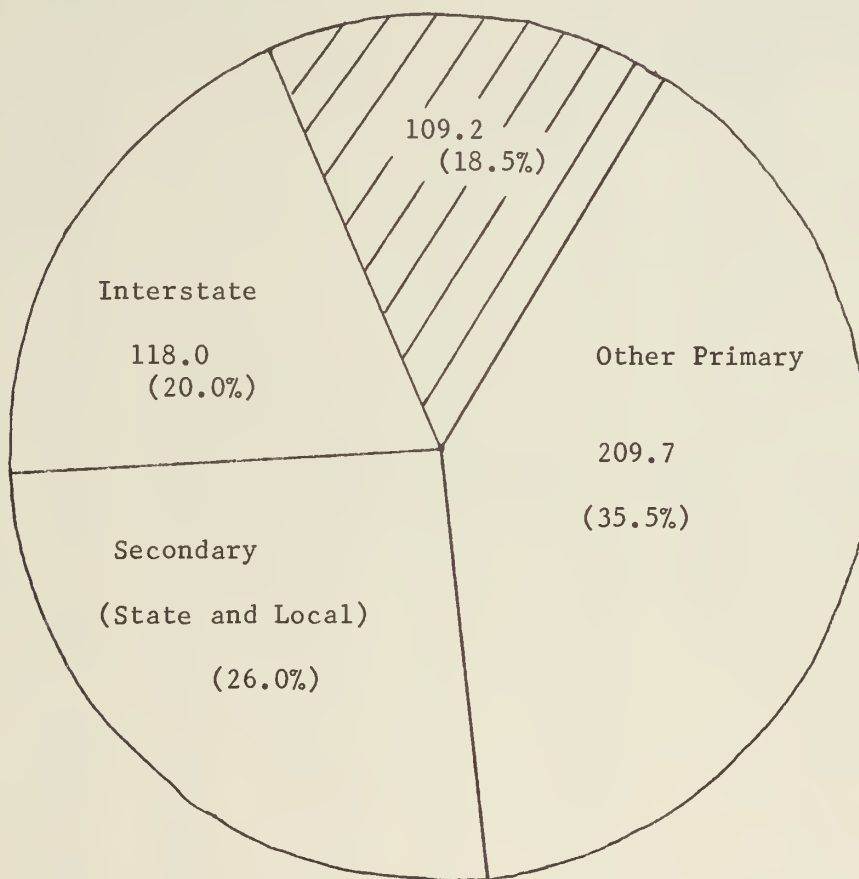
Source - 1974 National Transportation Report.

Inclusion 16

RURAL HIGHWAY MILEAGE AND
VEHICLE-MILES TRAVELED: 1972

Legend: Federal aid 

Non-Federal aid (State and Local) 



VEHICLE-MILES
(billions)

Source: 1974 National Transportation Report.

Inclusion 16A

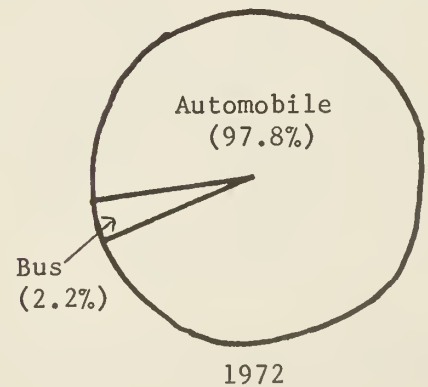
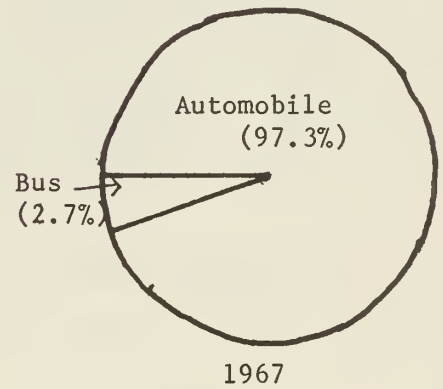
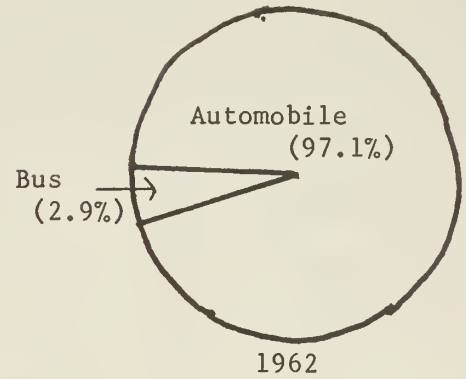
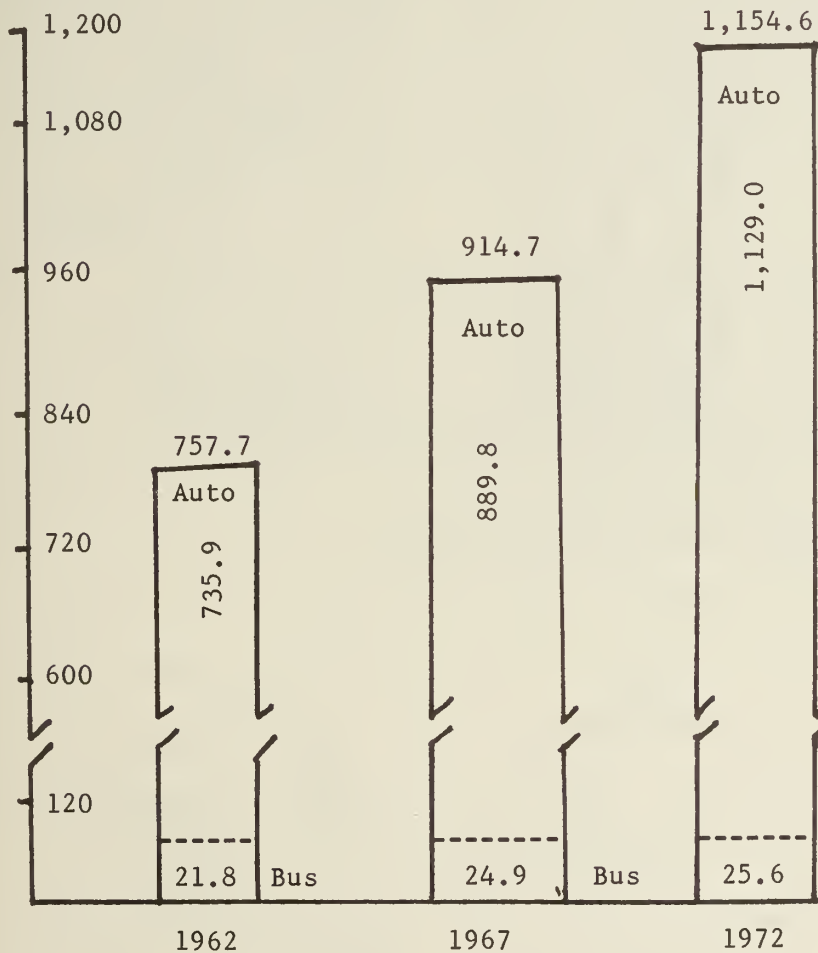
RURAL HIGHWAY MILEAGE, 1961, 1967, and 1972

	Rural highway mileage, thousands		
	1962	1967	1972
Under State control			
Primary	653.3	673.9	684.5
Secondary	406.7	423.8	408.2
	246.6	250.1	276.3
Under local control	2,351.4	2,320.8	2,252.0
Parks, forests, reservations, etc.			
State control	139.6	189.0	236.8
Federal control	19.8	24.8	27.6
	119.8	164.2	209.2
Total rural mileage	3,144.3	3,183.7	3,173.3

Sources: Federal Highway Administration, Highway Statistics, Washington, D.C., D.O.T., 1962, 1967, 1972; Interstate Commerce Commission, various reports.

INTERCITY PASSENGER TRAVEL ON HIGHWAYS
 BY MODE:
 1962, 1967, and 1972

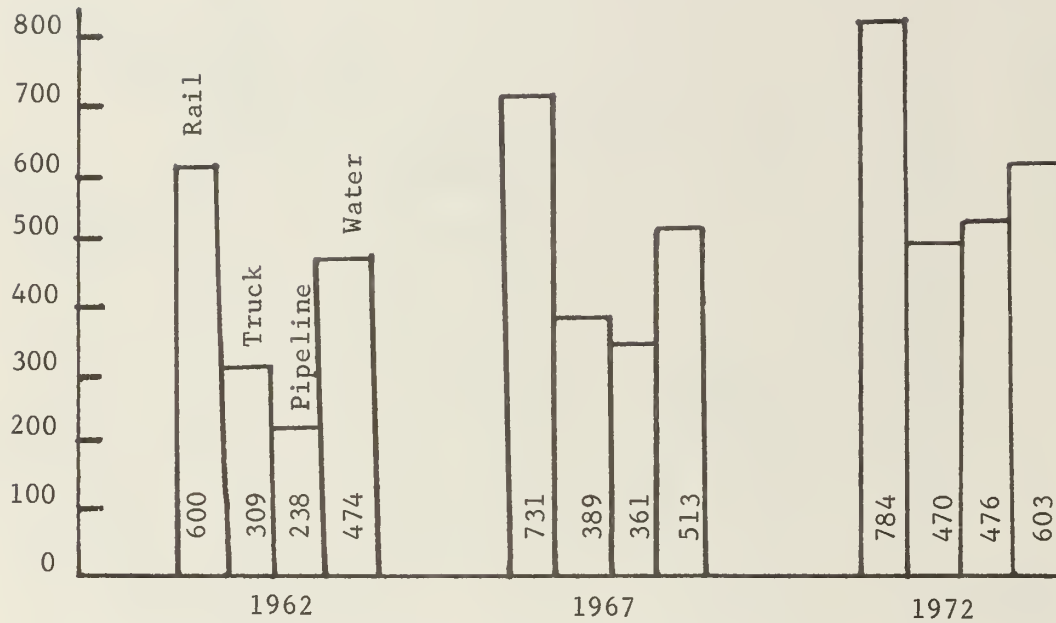
Passenger Miles
 (billions)



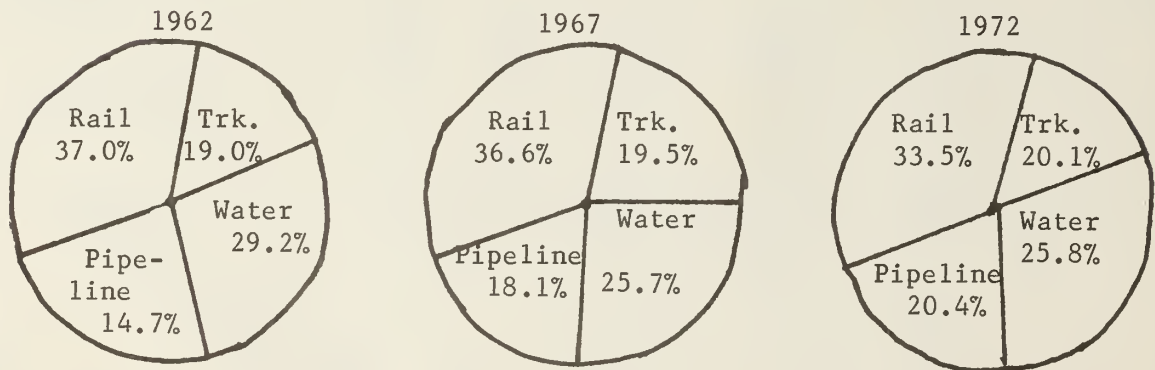
Source - 1974 National Transportation Report

Inclusion 18

INTERCITY TON-MILES CARRIED, BY TYPE OF CARRIER:
1962, 1967, and 1972



Percent of Total
Graphic Sequence: Rail, Truck, Pipeline, Water



Source - Transportation Association of America, Facts and Trends, 1973

These figures represent a shift in freight and passenger movement. These shifts play a significant role in the development of inter-city transportation.

The number of privately and publicly owned trucks has increased over 65 percent in the last decade. The average speed for all trucks as well as the average length of haul increased over the 10 year study period.

A major recent problem in the trucking industry centers around the fuel shortage. Two consequences of the fuel shortage are the sharp increase in fuel costs as well as the imposition of lower speed limits. Assuming no price increases, the lower speed limits reduce the tonnage that can be hauled per time period, which reduces revenues and increases costs. Lower revenues and higher costs must be absorbed by the industry and the consumer.

Summary

For the past 20 years the completion of the Interstate highway system maintained priority status, nationally. As this system nears completion, serious attention will be focused on the impact Interstate development has had on the nation's neglected primary, secondary, and urban highways.

In a recent Gallup poll, 85 percent of those questioned felt that more attention must be placed on the development of highway facilities that service rural areas. 56 percent of those responding were urban dwellers. The future development of rural regions as well as urban centers depends on a more efficient national road network.

Highway transportation issues that must be addressed concern the status of urban vs. rural highway development; people transportation vs. product transportation; as well as questions concerning what is being done to provide for efficient transportation facilities vs. what ought to be done.

Statistics bear out the overwhelming need for improvement of highways that service inter-city travel. Future natural and human resource development is

is intrinsicly tied to the efficient mobility of the American population. As such, the Federal commitment to transportation development has only just begun.

S E C T I O N I I

REGIONAL COMPARISON

The purpose of this section is to compare highway facilities available in four states of this region. The analysis presented here will consider the states of Montana, North Dakota, South Dakota, and Wyoming.

In attempting a scientific comparison, standardized data is essential. Although the four states already mentioned are relatively similar, socio-geographically, there are several restrictions to the rules of purely scientific inquiry that must be contended with in completing an analysis of this nature. For example, the methods of functional classification of highways; the ratings for sufficiency of roadways; as well as many administrative dissimilarities, vary from state to state.

Notwithstanding these differences among various primary data, it is the author's consideration that a reasonable comparison can be made.

Three major criteria will be used in comparing the four states. First, with the use of primary data made available by the individual states, the condition of each state's primary and secondary highways will be discussed. The second factor used in this comparison will concern various administrative characteristics of the States. Finally, population characteristics of each will be addressed.

MONTANA

Road Conditions

Nearly 44 percent of Montana's rural roads are rated "poor" or "very poor" by federal engineering standards, according to the Road Information Program study conducted in 1976. The study reported that 28,907 of the 65,981 miles of rural roads in the state need to be upgraded. The recent study also concluded that 230 of the state's 3,500 bridges are structurally deficient or obsolete by Federal Highway Administration standards.

Although the Montana Department of Highways uses a more complex scale in determining the adequacy of roads, their 1974 Sufficiency Rating report estimated that there are approximately 358 miles, or 7 percent of rural primary highways located in all sections of the state that are in a critical category, and should be reconstructed immediately.

There are approximately 2,304 miles of rural primary highways that are 60 percent or less sufficient and 1,945, or 40 percent of the total mileage, that are rated between 40 and 60 percent sufficient. The last category mentioned includes roads that are approaching obsolescence and should be replaced within five to ten years.

The Montana Department of Highways rates 53 percent of the total rural primary highways, or 2,558 miles, between 61 and 100 percent sufficient. This category translates into road conditions that vary from "tolerable" to "excellent". Inclusion 19 illustrates the deficiency ratings for primary highways throughout the 12 financial districts.

According to the Montana Highway Functional Classification and Needs Study: 1974 Update, the total needs for federal aid system highways in the 1974-1994 period are \$8,334,409,000., or about 2½ times the estimated available funding of \$3,268,000,000.

With such vast improvement needs, and limited funding possibilities, priority planning for construction is essential. The Federal Aid Highway Act of 1973 and the Federal-aid Highway Amendments of 1974 created several new programs which add emphasis to construction of obsolete Federal-aid system roads. There are five safety programs, and Off-System Program, and a Priority Primary Program. Such programs augment funding possibilities for many rural areas.

According to the Project Control Unit of the Montana Department of Highways, new Priority Primary and Safety programs as well as Off-System projects are being

FEDERAL AID PRIMARY SYSTEM
DEFICIENT MILEAGE BY FINANCIAL DISTRICTS AND PERCENTAGES USED IN APPORTIONING STATE
CONSTRUCTION FUNDS TO FINANCIAL DISTRICTS FOR FISCAL YEAR BEGINNING JULY 1, 1975
BASED ON SUFFICIENCY RATING DECEMBER 31, 1974

Financial District	Counties	Total Mileage	Deficient Mileage			Percentage for Fund Allocation	
			Rural	Urban	Total		
1.	Flathead, Lincoln, Lake	507.9	220.5	2.9	223.4	43.9	11.4811
2.	Blaine, Glacier, Hill, Liberty, Toole	355.8	122.3	1.6	123.9	34.8	6.3676
3.	Daniels, Phillips, Roosevelt, Sheridan, Valley	498.4	169.3	1.9	171.2	34.3	8.7984
4.	Dawson, McCone, Prairie, Richland, Wibaux	406.6	148.1	1.5	149.6	36.7	7.6884
5.	Fergus, Garfield, Petroleum	357.7	140.3	0.9	141.2	39.4	7.2566
6.	Cascade, Judith Basin, Pondera, Teton, Chouteau	417.2	163.1	3.4	166.5	39.9	8.5569
7.	Broadwater, Jefferson, Lewis and Clark	269.6	106.8	1.3	108.1	40.0	5.5555
8.	Granite, Mineral, Missoula, Powell, Ravalli, Sanders	477.5	210.1	4.2	214.3	44.8	11.0135
9.	Beaverhead, Deer Lodge, Madison, Silver Bow	322.9	114.3	4.9	119.2	36.9	6.1260
10.	Gallatin, Meagher, Park, Sweet Grass, Wheatland	461.7	151.5	3.0	154.4	33.4	7.9402
11.	Big Horn, Carbon, Golden Valley, Musselshell, Stillwater, Treasure, Yellowstone	428.8	175.0	5.0	180.0	41.9	9.2507
12.	Carter, Custer, Fallon, Powder River, Rosebud	535.5	190.0	3.9	193.9	36.2	9.9651
TOTAL		5039.6	1911.3	34.5	1945.8	38.6	100.0000

considered by the counties and the Department.

Present plans for the development of primary, secondary, and urban projects are based upon the assumption that the amount of federal funds under these programs will continue at the same rate as was provided by the Fiscal Year 1976 apportionments.

It appears likely that the Interstate completion date will be extended beyond 1979, in order to provide for sufficient financing. From November, 1966 to September 1975, Montana experienced the withholding of federal fund apportionments by the Federal Highway Administration. Presently, there are no restrictions on utilization of federal apportionments. However, if in the future, limitations are placed on federal funds, it could mean the revision of scheduled construction dates.

The Montana Tentative Construction Program for Fiscal Years 1976 - 1981 has scheduled work throughout the 12 financial districts for various programs including Interstate, primary, urban, secondary roads, Off-system roads, as well as various safety programs. The total road mileage mentioned in the construction program includes 2,487 miles of roadway. Financial District 11 which includes Big Horn, Carbon, Golden Valley, Mussellshell, Stillwater, Treasure, and Yellowstone counties will upgrade 433.9 miles. Of that total, 122.4 miles are related to the Colstrip Growth Center Project. Financial District 11 will upgrade the largest portion of roadway as compared to any other financial district.

Financial district 5, which is comprised of Fergus, Garfield, and Petroleum counties, will upgrade the smallest portion of roadway, a total of 82.1 miles.

To develop the idea of the enormity of highway transportation needs in Montana, the Federal aid Primary Needs Study 1974 - 1994 indicates that approximately 4,322 miles of rural primary highways and 141 miles of primary extensions in incorporated cities will require some type of construction or reconstruction

in the next 20 years. The combined total of both municipal and rural mileage requiring reconstruction amounts to approximately 85 percent of the total primary mileage.

Because of a lack of funding possibilities, only 67 percent of the total mileage that requires improvement, can actually be improved. Of the 2,952 miles deemed in immediate need of repair, only a small portion is considered in the 1976 - 1981 Tentative Construction Program.

Administrative Considerations

Montana differs from its neighboring states in that it divides its total funds available for highway construction into twelve financial districts. The State Financial District Law was enacted to provide a statutory means of dividing highway construction funds in a manner which would assure that each highway system and area of the state would receive its fair share of highway construction expenditures.

The law covers only the allocation of state highway construction funds; however since the state money is used to match federal funds, the net effect is to also control the expenditures of federal funds.

Inclusion 20 demonstrates the various factors which are involved in determining the allocations to the twelve financial districts for various highway programs. Inclusion 21 illustrates the matching ratios for various highway programs in Montana.

In fiscal year 1976, the federal matching funds available to Montana total \$138,105,347.02. The State matching funds required total \$30,009,134.28. Inclusion 22 represents the apportionment of state funds among the various highway programs.

Inclusion 23 demonstrates where this money comes from. The total funds

TYPES OF FEDERAL FUNDS AVAILABLE
FOR HIGHWAY CONSTRUCTION PURPOSES

Table No.	Type of Fund	Allocated To	Factors
2	Interstate	Financial Districts	Estimated cost of completing system in each financial district.
3	Rural Primary	Financial Districts	Proportion of deficient system mileage in each district.
4	Priority Primary	Approved Priority Primary Routes	Estimate cost of constructing or reconstructing each route.
5	Rural Secondary and Off System Roads	Financial District & Counties	Proportion of rural population, land area, rural road mileage and value of rural land in each financial district and county.
6	Urban	Cities of 5,000+ Population	Proportion of population.
7	Metropolitan Transportation Area Planning	Cities of 50,000+ Population	Proportion of population.
8	Economic Growth Center	Approved Growth Centers	Deficient Mileage in Area of Influence of each Growth Center.

Inclusion 20

Source: House of Representatives. Agriculture Committee; Family Farms and Rural Development. Subcommittee Hearings, April 1973.

Inclusion 21

MATCHING RATIOS FOR VARIOUS HIGHWAY PROGRAMS

The current matching ratios for the various highway programs are as follows:

	<u>Federal</u>	<u>State</u>
Interstate	91.19%	8.81%
ABCD Systems, Priority Primary & Economic Growth Centers	73.96%	26.04%
Safety Programs (except Pavement Marking)	90.00%	10.00%
Safety Programs (Pavement Marking)	100.00%	-0-
Forest Highways	100.00%	-0-
Off System Roads	73.96%	26.04%
Metropolitan Trans. Area Planning	80.00%	20.00%
HPR	Various—depending upon fiscal year funds being utilized	

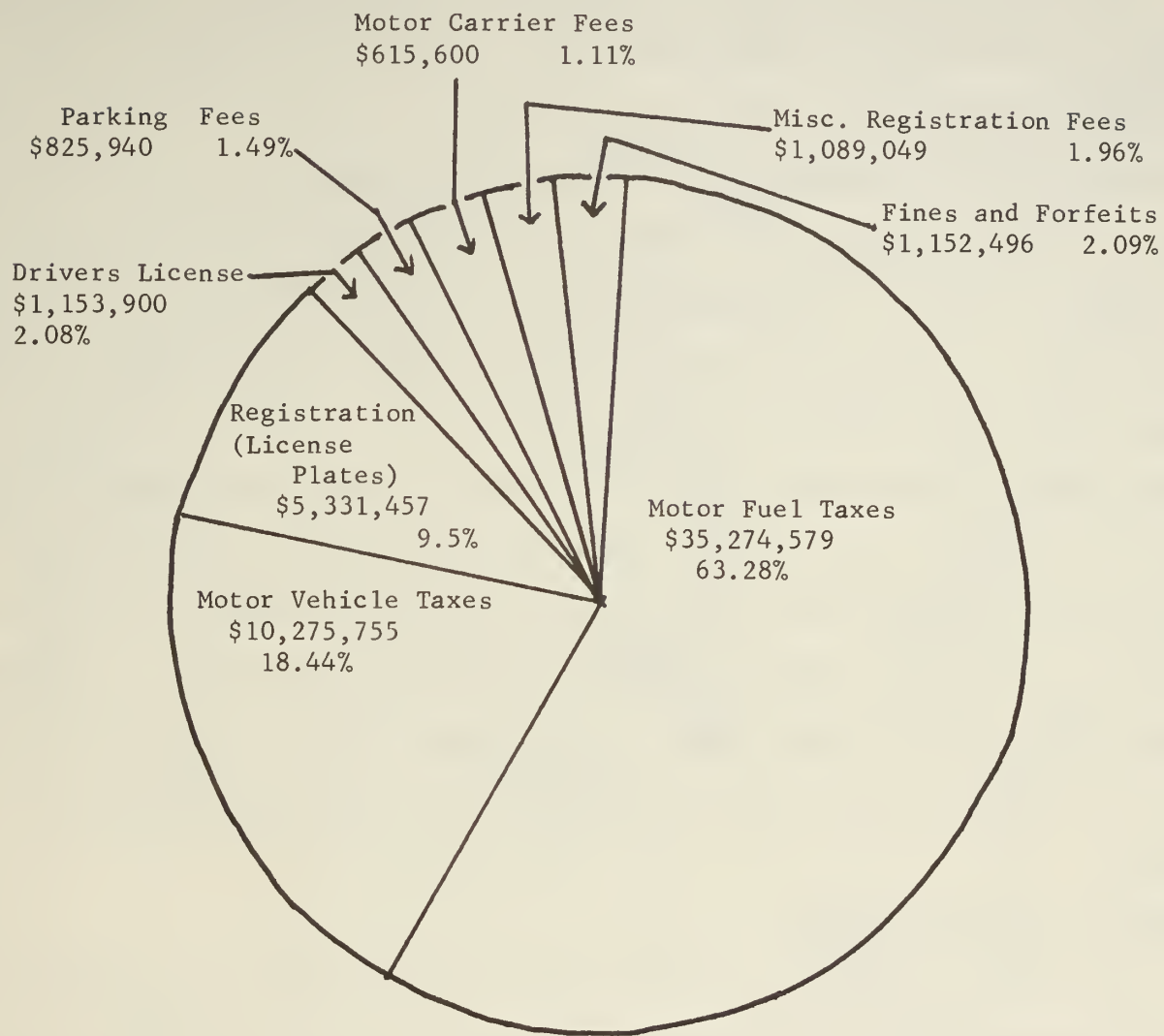
Inclusion 22

MONTANA STATE CONSTRUCTION FUNDS FISCAL YEAR 1976

1. Interstate	5,420,928.42
2. Federal aid primary - rural	10,055,310.00
3. Priority Primary	2,383,739.00
4. Federal aid secondary - rural	5,761,748.89
5. Federal aid urban extensions	281,750.42
6. Federal aid urban system	3,365,683.66
7. Metro area transit planning	67,771.00
8. Federal aid economic growth centers	843,659.00
9. Federal aid off system roads	1,623,060.00

STATE HIGHWAY USER TAX PAYMENTS

(Exclusive of Refund and Collection Expenses)



1975

Total \$55,718,776

Source: Montana Highway Dollars, Montana Highway Users Federation, 1975.

available to the state construction fund is comprised of funds that are made available through the various highway user taxes.

Not only does the division of Montana into twelve financial districts make the state different than neighboring states. The recent development of coal resources has been a major factor in the passage of the Montana Coal Tax. Coal tax funds are available to coal development impact areas. Specifically, 10 percent of coal tax revenues can be spent on the financing of transportation facilities in communities which have experienced at least 10 % growth rate as a result of coal development. Regular Federal-aid cannot be used to match State Coal Highway funds. Special federal funding would be necessary to match the State funds. To date, there have been no special Federal funds made available.

It is estimated that the coal tax will provide between \$15,000,000 and \$17,000,000 of highway funds during the four year period spelled out in the coal tax bill. This total falls short by approximately \$47,000,000.00 of the amount needed to construct or reconstruct the 300 miles of road in the Growth Center Areas. Inclusion 24 shows the area involved in the Colstrip Economic Growth Center.

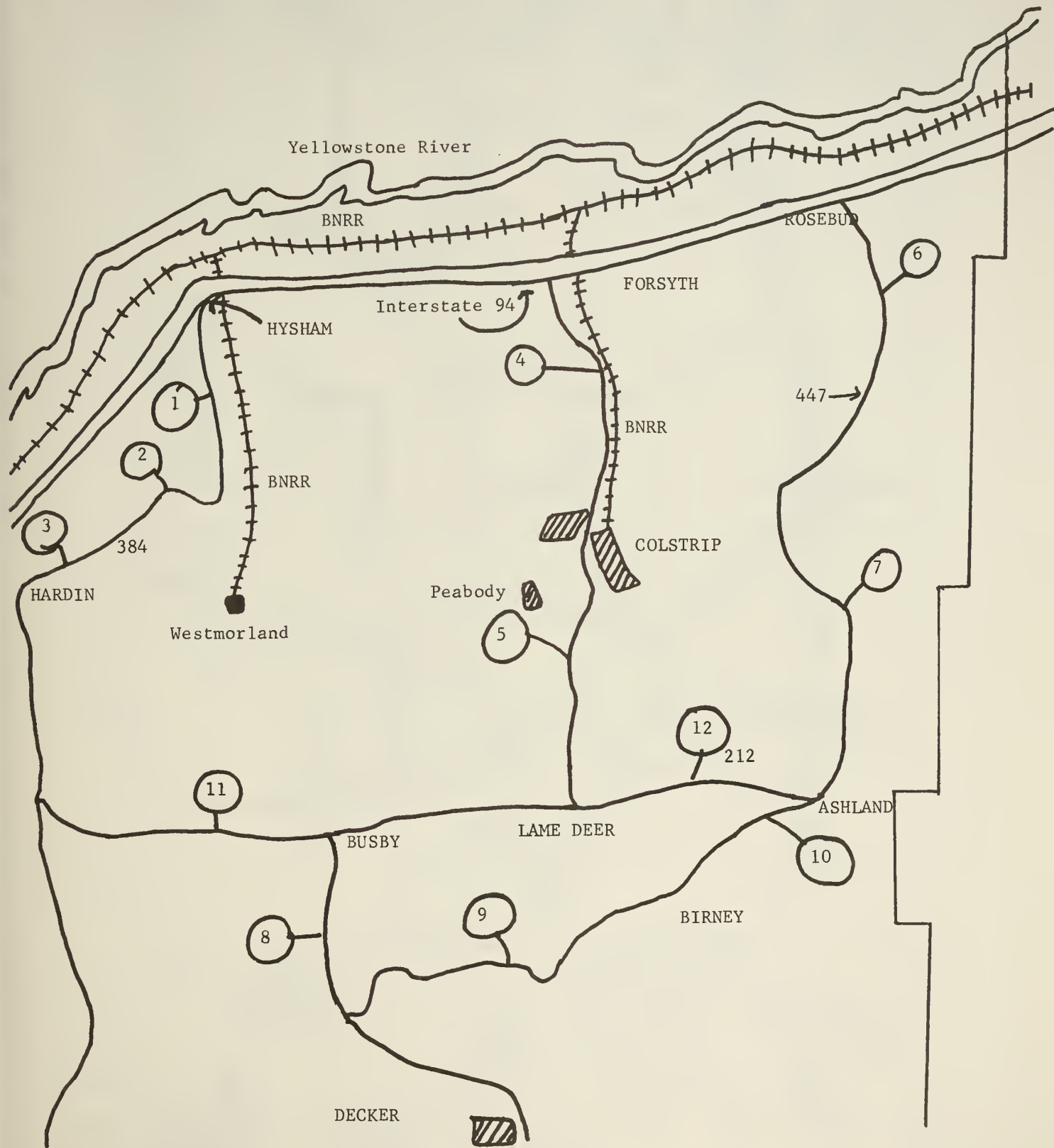
Population Considerations

Montana is unique. Because the state is yet unspoiled by large amounts of unguided development, the opportunity to direct the state's growth still remains.

One of the most important factors in the development of Montana is transportation. With a land area of 147,000 square miles, Montana must maintain more than 75,000 miles of public roadway. With a population of 694,000 (1970 Census) the tax base required to maintain such a system is less than adequate. This is substantiated by the fact that there are 11 miles of highway for each 100 Montanans, compared to 1.8 miles per 100 persons nationally.

Inclusion 25 demonstrates that not unlike its neighboring states, the major

MONTANA COLSTRIP ECONOMIC
GROWTH CENTER AREA



traffic flow in Montana is East-West. This trend in traffic movement can be linked to various factors including the commodities markets located to the east and west of Montana; the development of tourism in the western regions of the state; as well as the development of the Interstate system through the state.

One of the more grim statistics that Montanans are living with is that Montana has one of the highest rates of motor vehicle traffic deaths than most other states. In 1972, Montana had the highest number of deaths per 100 million miles of vehicle travel, and yet the state carried only a fraction of the total vehicle miles driven nationally.

The major industries in the state range from agricultural pursuits to natural resource development. The tourism industry is rapidly developing in the Rocky Mountain regions of the state.

The fastest growing areas of the State in the 1950's were the Northeast and Southeast, whereas in the 1960's it was the West that grew most rapidly, the Northeast actually declined in population in the 1960's. Presently, all areas of the state appear to be growing in population at a relatively similar rate.

Summary

The obvious difficulties in providing an adequate highway transportation system to Montana are expressed by the fact that Montana is one of the largest states in the Nation area-wise, and yet one of the smallest states in the Nation population-wise.

In spite of the fact that Montana spends a large sum of tax money annually to improve its highway system, it would appear that the approach is only piecemeal in nature. The commitment to better roads in Montana by the Federal government is intense. In fiscal year 1975 Montana received \$48 million from the Department of Transportation, of which \$43 million came from the Highway Trust Fund.

It would seem that chances in making significant improvements in the Montana highway network rely solely upon the ability to generate relatively more funds for construction than has been the case in the past.

NORTH DAKOTA

Road Conditions

North Dakota has a total of 105,934 miles of surfaced and unsurfaced highways and roads. Of this total, 66.9 percent is surfaced with hard surface or gravel. The total bituminous and concrete surfacing of the State's roads total 11,381 miles, or 16.0 percent of the total surfaced mileage.

North Dakota has a total of 579 Interstate miles. With the exception of 30 miles of Interstate 29 in Southeast North Dakota, the total Interstate mileage in the State is complete. Other State Highway mileage includes 4,171 miles of primary highways; 2,201 miles of secondary highways; and 27 miles of State urban roads. The total Federal-aid highway on the State highway network is 6,978 miles. This represents about 7 percent of the total mileage in the State, which is the lowest State highway system to total mileage ratio in the Nation.

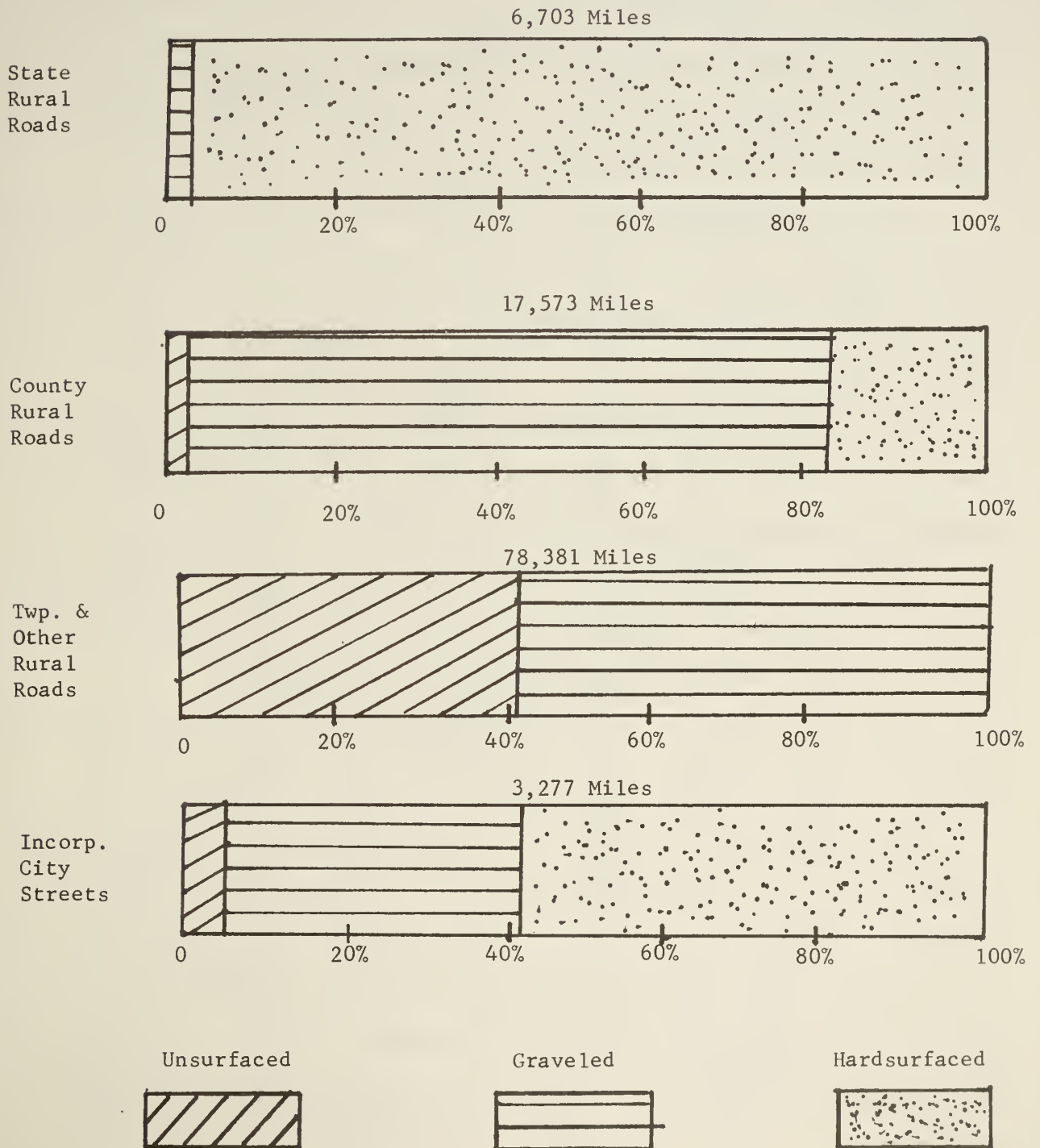
Nearly 44 percent of the rural grade mileage on the State highway system is less than 15 years old. Although sufficiency ratings for the state roads are not available, Inclusion 26 may help to illustrate the types of roads available to the North Dakota intercity traveller.

During the 1974 calendar year, travel on all roads and streets of the state totaled 4.4 billion miles. Of this total, 50 percent was generated on rural State Highways; 27 percent was generated on local roads and streets; and 23 percent was generated on incorporated city streets.

According to the 1974 - 1990 Capital Improvements Study, conducted by the North Dakota Department of Transportation, construction cost needs for the State

Inclusion 26

NORTH DAKOTA ROAD AND STREET MILEAGE
BY SYSTEM AND TYPE OF SURFACE
DECEMBER 31, 1974



totaled \$3,486,880,000.00 for the 1974 - 1990 period, based on 1974 dollars.

The 1974 traffic flow chart for North Dakota illustrates the importance of the State's Interstate system. The system connects Fargo with Bismark and the Montana border, as well as providing a north-south route along the eastern border of the State. Inclusion 27.

A significant force in the improvement of North Dakota's highway facilities will be the four-laning of U. S. 2 throughout the State by mid-1980's. It has been estimated that east-west road mileage in the state is four times more important economically than the north-south routes.

The motor vehicle deaths per 100 million miles of vehicle travel is lower in North Dakota than the other three States involved in this study. However, the fatality rate in the State was above the National average in the study years of 1973 and 1974.

Because North Dakota has virtually completed its Interstate system, more funds should be available for improving primary, secondary, and urban roads.

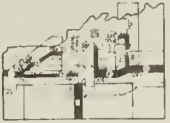
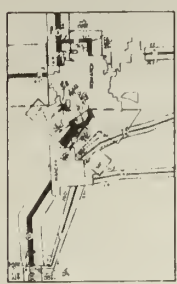
Administrative Considerations

Construction and maintenance of the North Dakota road and street mileage is the responsibility of five separate administrative jurisdictions: Federal, state, counties, organized townships, and incorporated cities.

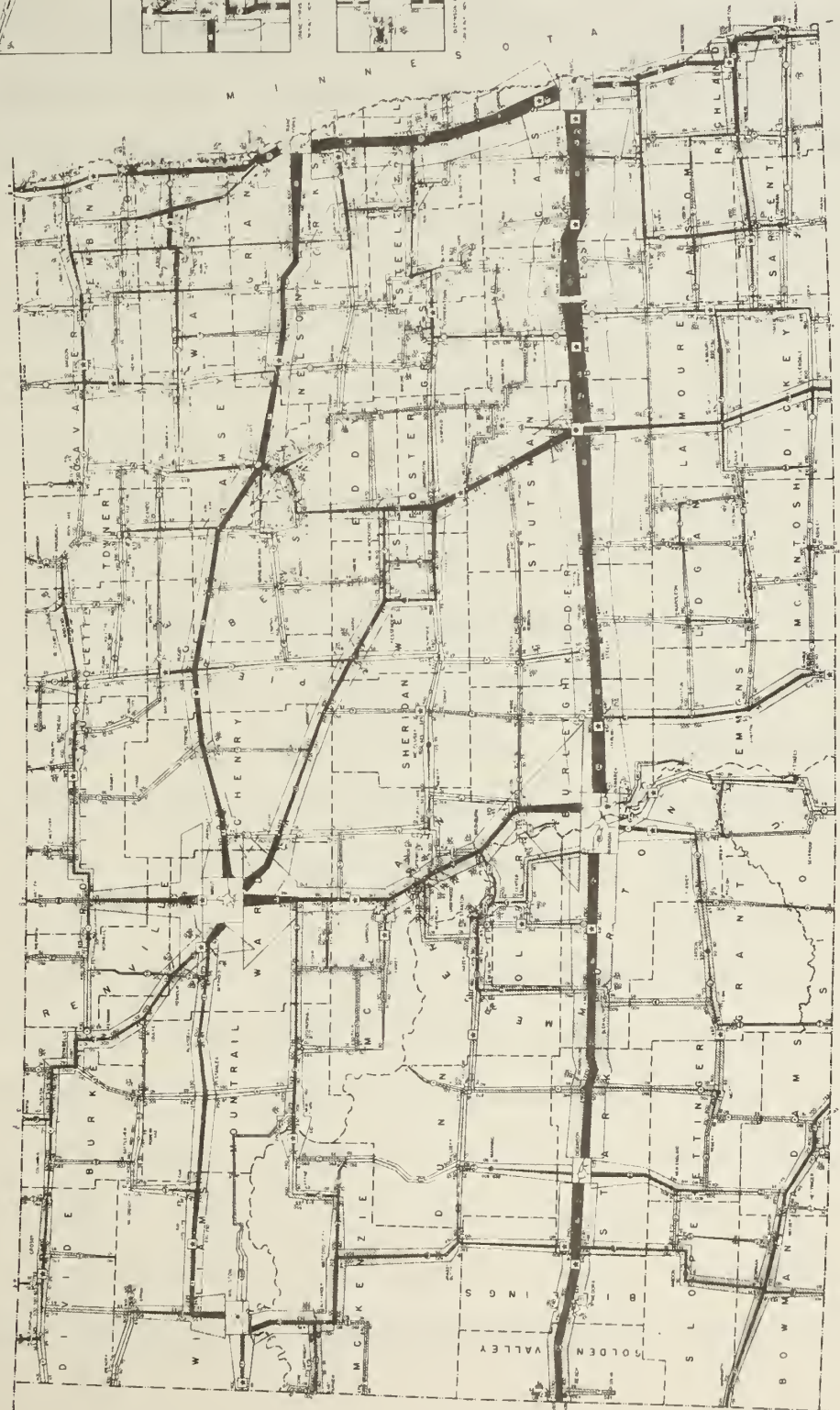
Roads under Federal jurisdiction consist of those located in National parks, forests, and reservations.

The State highways are comprised of three designated systems: Interstate, primary, and secondary. In order to achieve continuity, highway routes may extend into or through municipal areas thereby connecting the rural parts of the routes. These links are the urban extensions. The State Highways are under the administrative jurisdiction of the North Dakota Department of Transportation. Funding for State highways are approved by the State Highway Commission.

D D M I N I D N D F C A N A D A



1974
TRAFFIC FLOW MAP
STATE OF
NORTH DAKOTA
NORTH DAKOTA STATE HIGHWAY DEPARTMENT
TRANSPORTATION SERVICES DIVISION
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



LEGEND



M O N T A N A

S O U T H D A K O T A

N E B R A S K A

MINNESOTA

WISCONSIN

ILLINOIS

INDIANA

MICHIGAN

OHIO

PENNSYLVANIA

MARYLAND

DELAWARE

VIRGINIA

WEST VIRGINIA

KENTUCKY

TENNESSEE

MISSISSIPPI

ALABAMA

LOUISIANA

MISSOURI

ARKANSAS

OKLAHOMA

KANSAS

NEBRASKA

MINNESOTA

WISCONSIN

ILLINOIS

INDIANA

MICHIGAN

OHIO

PENNSYLVANIA

MARYLAND

DELAWARE

VIRGINIA

WEST VIRGINIA

KENTUCKY

TENNESSEE

MISSISSIPPI

ALABAMA

LOUISIANA

MISSOURI

ARKANSAS

OKLAHOMA

County highways consist of a designated Federal highway aid system of local roads, and a regular county road system. The county highways are under the administrative jurisdiction of the Board of County Commissioners of the 53 North Dakota counties.

The amounts of Federal-aid Highway money available for North Dakota is determined by the Federal statutory matching ratios for various highway projects. Because of its proportionately smaller amounts of Federal lands, the matching ratio for North Dakota is slightly less than Montana, and ten other Western States.

Although \$25 million in Federal-aid Highway funds will be available for construction and improvement of state roads in fiscal year 1976, there presently exists a shortage in state matching funds. The net effect of losing these state-Federal matching funds will result in a loss of approximately \$8 million for highway purposes.

Alternatives for funding possibilities are being considered presently, and will play a major role in the future of the State's highway system.

Population Characteristics

The State of North Dakota relies predominantly on farming as the main source of income. In light of this, the State's population is closely linked to inter-city, farm-to-market highways.

The 1974 population of the State was 634,000 persons. Of this total, about 65 percent are living in rural areas. Larger urban areas have attracted a relatively larger number of people as compared to rural areas in North Dakota. The population of North Dakota is approximately equally divided between the north and south regions of the state. As a result, highway needs are similar throughout the State.

North Dakota during a 10 year period ending 1960, experienced a 2.1 percent

growth in population. The nine counties, as a whole, on U. S. 10 through North Dakota grew 12 percent while the nine counties on U. S. 2 grew 14 percent. This pattern reflected a 30 year trend.

In 1970, North Dakota experienced a 5 percent drop in civilian population. The nine counties on the new Interstate, which replaced U. S. 10, experienced a 4.5 percent increase in population while the nine counties along U. S. 2 experienced a 5 percent decrease in population. This statistic tends to suggest that the improvement of highways in North Dakota has more than a casual relationship with the population trends in any given section of the State.

The development of modern highways in North Dakota has been, and will continue to be a significant factor in the development of rural and small urban areas.

SOUTH DAKOTA

South Dakota has a total of approximately 106,500 miles of roadway that services a total land area of close to 47,000 square miles. There are 9,297 miles of highways on the state highway system which is comprised of Interstate, primary, secondary, and state trunk systems.

Since 1954, the South Dakota Department of Transportation has conducted sufficiency tests for all of the state's road systems.

It appears that the condition of state highways in the state of South Dakota is better than any of the four states in the study. Of the total Interstate system of which there is 679 miles, there remains about 10 percent to be completed by 1981. The Interstate mileage is rated at 96.0 percent sufficient by the State's rating system. This figure translates into excellent highway conditions.

The South Dakota Sufficiency Rating is based on 100 points for a road section which completely meets modern design standards, and is in excellent stru-

ctural and driving condition. Any deficiency results in a deduction of points, with predetermined maximums.

Following this formula, the total Federal-aid Primary System is given a weighted average sufficiency rating of 81.1, which is within the bounds of good road conditions. The Federal-aid Primary System is a limited connected system of principal highways with urban connections. South Dakota's Federal-aid Primary System amounts to approximately 5,300 miles.

The weighted average sufficiency rating for South Dakota's Federal-aid Secondary System is 75.0 points. This translates into tolerable road conditions. The total secondary mileage in the state is approximately 2,500 miles. The Federal-aid Secondary System is a system of principal farm-to-market to feeder highways in South Dakota.

There are approximately 700 miles of highways on the State Highway Trunk System which are not on any Federal-aid system. The weighted average sufficiency rating for these roads is 59.3 points. These roads are considered to be in unsatisfactory condition.

The South Dakota Department of Transportation has maintenance responsibility for approximately 7,800 miles of State Trunk Highways. Maintenance on these State Trunk Highways is paid for entirely with State funds.

Administrative Concerns

The South Dakota Department of Transportation coordinates all transportation facilities in the State that are in service to the general public. The State Highway Commission allocates funds to be used for construction and maintenance purposes.

The South Dakota Department of Transportation's state revenues come from several generated tax sources. These sources include the Department's share of the tax revenue from motor fuel, motor vehicle registration fees, special

transfers, appropriations and miscellaneous. The estimated state revenues for Fiscal Year 1975 for construction of projects on the State Highway and local system is \$9.6 million.

South Dakota's Federal Highway funds come from revenues derived from Federal taxes on motor fuel, tires, tubes and tread rubber, parts and accessories, lubrication oil, excise and gross weight tax. These funds are commonly called the Highway Trust Fund. These funds are apportioned by fiscal year to the individual states through Congressional action based on the state's ratio of rural population, land area, rural and post road mileage, as compared to the total for the United States. Like Montana, not all of the apportioned funds are available for use by the state because of impoundment of funds by the Executive Branch of Federal Government. The amount apportioned to South Dakota in Fiscal Year 1975 for Highway Construction was \$40.8 million.

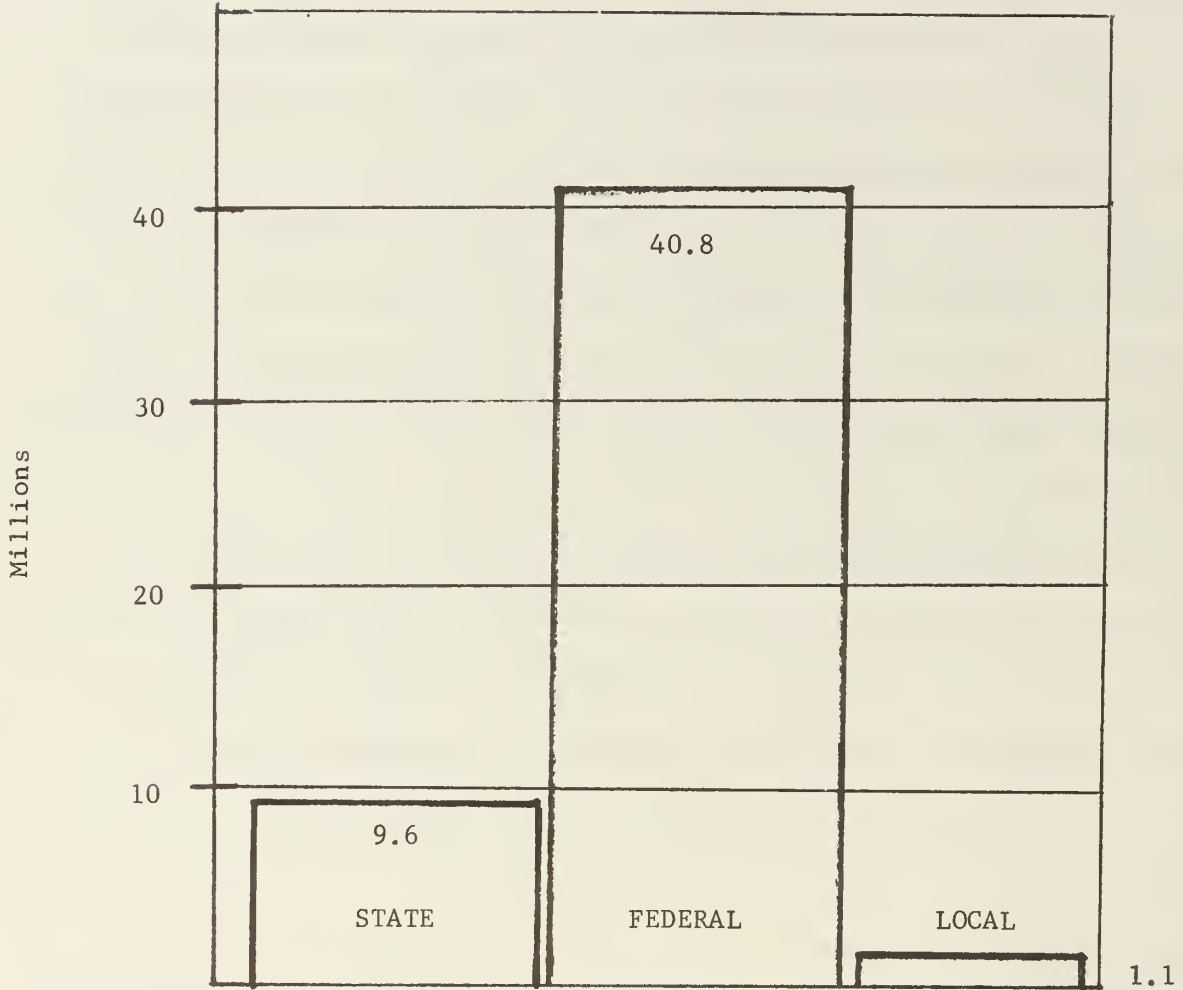
Local funds represent financial participation by counties to match Federal funds programmed for highway construction in their respective areas.

The total revenues available for highway construction in 1975 was \$51.5 million. Inclusion 28 graphically illustrates the matching ratio breakdown. The following chart, Inclusion 29 illustrates graphically which highway programs received part of the available revenues.

Population Characteristics

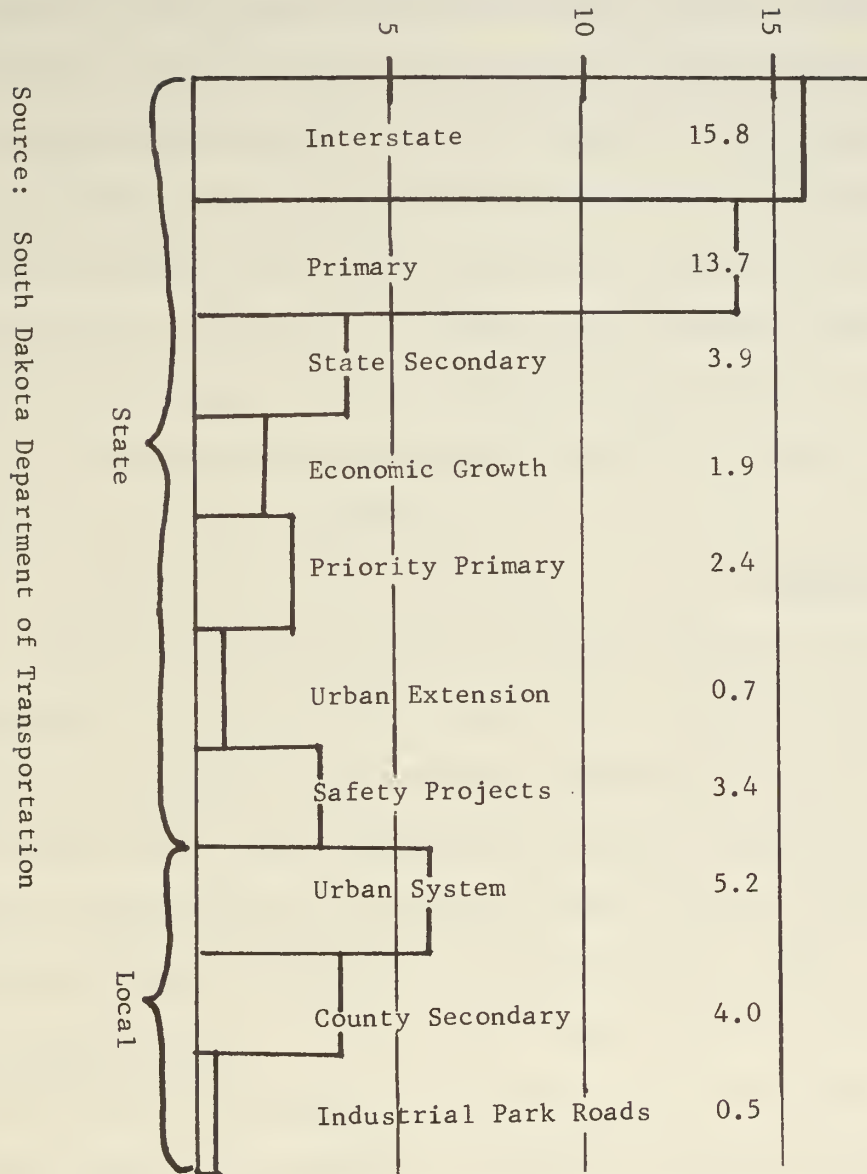
South Dakota had population increases during the 1950's, declines during the 1960's, and increases again (at higher rates than in the 1950's) in the early 1970's. According to the 1974 census estimate, the population is 683,000 persons. This represents a net increase of 2.6 percent over the 1970 population statistic. In the four state region discussed in this study, South Dakota is larger in area than North Dakota, yet has maintained a popu-

REVENUES AVAILABLE FOR HIGHWAY CONSTRUCTION
Fiscal Year 1975



Source: South Dakota Department of Transportation

Millions



Source: South Dakota Department of Transportation

FUND USE IN FISCAL YEAR 1975 - HIGHWAY CONSTRUCTION
Total: \$51.5 Million

lation second only to Montana, over the last 20 years.

Highway transportation is very important to the State of South Dakota. The two major industries, Agriculture and Tourism, depend almost entirely on this mode of transportation. Increased vehicle traffic and curtailment of other surface modes of transportation necessitates a good system of streets and highways in the state for movement of people and products.

Excluding the Northwest quadrant of the State of South Dakota, all areas of the state are serviced by modern and efficient highways. The development of the tourist industry in the Black Hills has helped the Western section of the State to secure roads that are up to the standards of the road mileage in the more densely populated Eastern section of the State.

WYOMING

Road Conditions

Wyoming is unlike any other state involved in this study. The state's total highway mileage is the lowest overall in terms of actual surface. A large portion of the state is mountainous, as in Montana, which restricts the service of highway transportation throughout the state. Indeed, there clearly is a correlation between the terrain and the total mileage of highway surface in a state. Although the state of Wyoming is larger in area than either South Dakota or North Dakota, it has a total road mileage of less than one-third of the total mileage of either of those states.

The classification of highways in Wyoming is the same as the other three states. There are however, noticeably fewer miles of road in any of the four general highway categories. The total Interstate mileage in the state is 914 miles, which is comprised of three different Interstate routes.

There are 2,882 miles of primary; 2,665 miles of secondary; 168 miles of urban; 15,000 miles of county; 2,800 miles of National; and 7,000 miles of

local and other types of roads in the state. The total mileage in the state is 31,717 miles.

More so than the other states in the four state region, the highway system in the state of Wyoming is in dire need of improvement. Specifically, of the thirteen counties that comprise eastern Wyoming, only Weston county has a total highway mileage which is considered to be in good condition regarding highway safety and service. The sufficiency rating conducted by the state of Wyoming expresses that five of the thirteen counties in the eastern section of the state have a total mileage that is less than 30 percent deficient.

The capital expenditures for highways in Wyoming will be approximately \$450,000.00 in state funds for the 1974 - 1980 period.

Since Wyoming has no urban areas and poor commercial airline service, the highway network is the most vital link in providing adequate transportation, not only to the citizens of Wyoming, but also to persons outside of the state who use the highways.

While Wyoming has a proportionately smaller percentage of total road mileage as well as a relatively lesser share of total highway traffic than the other three states mentioned in this report, it still maintains a higher traffic fatality rate than either North or South Dakota.

Administrative Considerations

The system of Federal-aid highways in Wyoming is similar to those already cited in the three other states. However, as could be expected, there is a large share of forest highways in the state. The administration of the Forest Highway Program is under the jurisdiction of the Federal Highway Administration. The money for development of this system is apportioned to the States on the basis of mileage and value of the forests within each State. The money that is apportioned to the State is programmed for specific construction projects jointly

by the Federal Highway Administration, the Forest Service, and the State Highway Department.

In Wyoming there are two Forest Service regions. Forests in the western part of Wyoming are under the supervision of Forest Service Region Four with headquarters in Ogden, Utah. The remaining forest areas are under the jurisdiction of Forest Service Region Two headquartered in Denver.

It is the duty of the State Highway Commission to designate public highways to be known as State highways, which may coincide in whole or in part with the Federal-aid highways systems, county roads, city streets, or other road systems.

Under the supervision of the State Highway Commission, the Superintendent and Chief Engineer of the Department have complete charge of laying out and establishing highways upon which any portion of the State Highway Fund is to be expended.

Population Characteristics

The 1974 population of Wyoming stood at 359,400 persons. Of this total, there are no people living in metropolitan statistical areas. The population density of the state is by far the lowest in the four state region. Although the state's population growth was very small in the 1960-1970 period, the state experienced an 8.4 percent population increase in the first four years of this decade. This growth rate is very closely tied to the development of the State's natural energy resources.

The ranching and tourist industries have played a predominant role in the development of the state, to date, however natural resource development is expected to play relatively more significant role in the state's future.

Part 2 - Summary and Observations

Highway transportation in the four state region will continue to be a major

concern for the residents of the area for the foreseeable future.

One of the most significant observations that can be made regarding the above comparison is that the total land area to population ratio for all four states acts as a serious barrier to the improvement of highway facilities. In all cases, the total cost of financing highway needs, both short and long term, is overwhelmingly greater than the total available funds for highway improvement. With an inadequate tax base to provide revenue for financing today's expensive highways, the four concerned states find it impossible to improve highways faster than they are deteriorating.

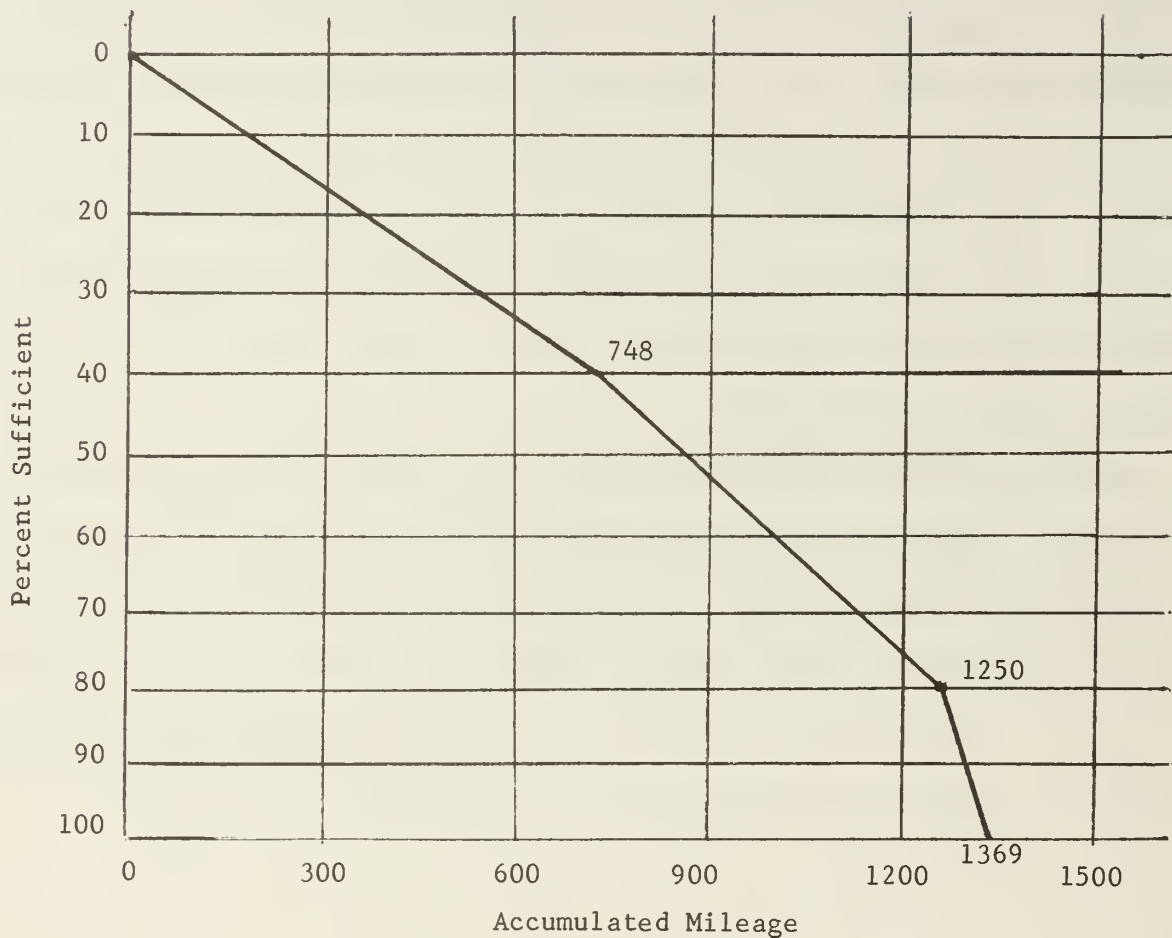
Part 3 - Graphic Illustrations

In an attempt to consolidate much of the material in this section, the following pages represent a graphic outlook on the various data that was collected and discussed in this section. Although many other aspects of comparison are made in the preceding pages, the basic comparison of road conditions will make it easier for the reader to understand road conditions as perceived by the States' Highway Departments or Departments of Transportation.

Inclusion 30

Graphical Sufficiency Rating - Wyoming Secondary

*Includes 13 Eastern Counties



Inclusion 30 illustrated that 748 miles of the 1369 Secondary highway miles studied were less than 40 percent sufficient; 502 miles were between 40 and 80 percent sufficient; and the remaining 119 miles were between 80 and 100 percent sufficient.

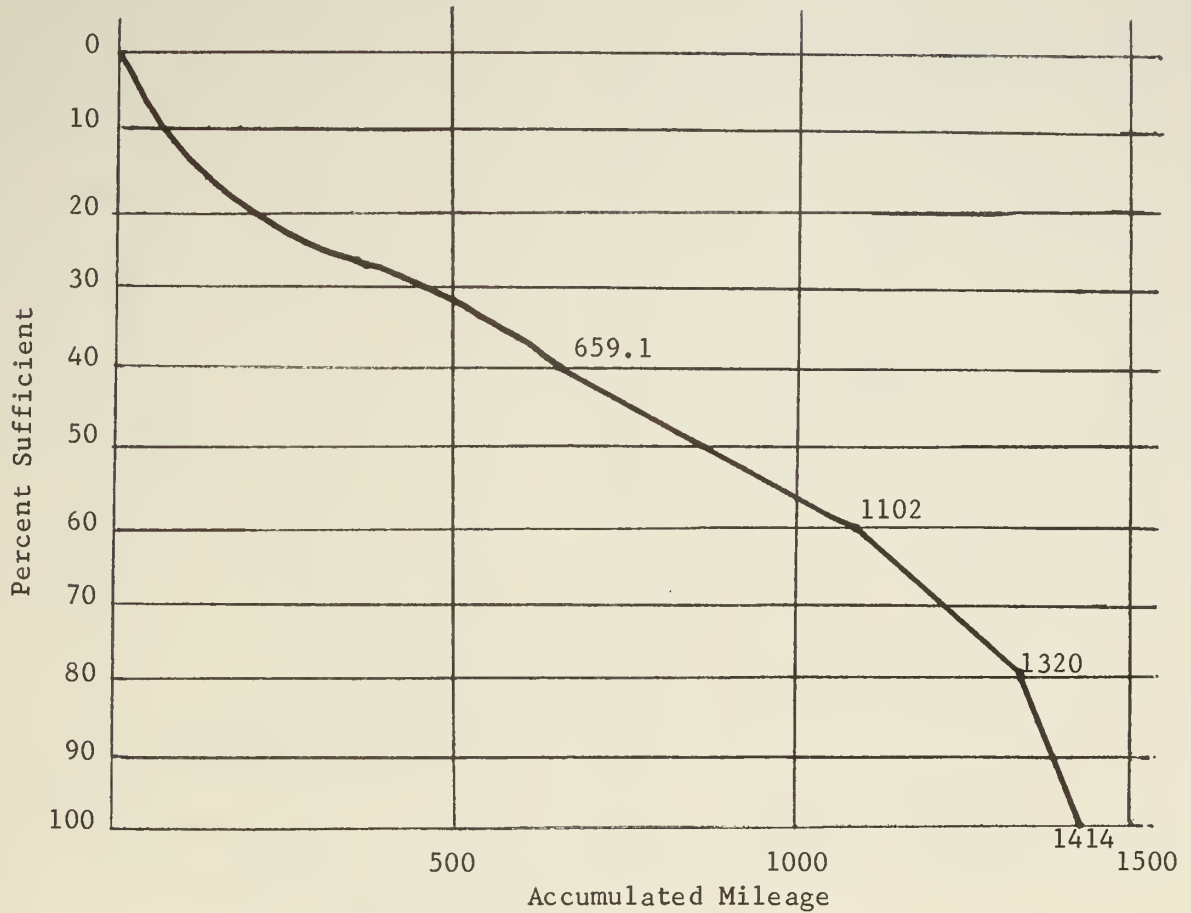
Source: Wyoming Highway Department

Inclusion 31

Graphical Sufficiency Rating - Wyoming Primary

13 Easternmost Counties = 1,414 Miles

Represents approximately 50% of total primary mileage.

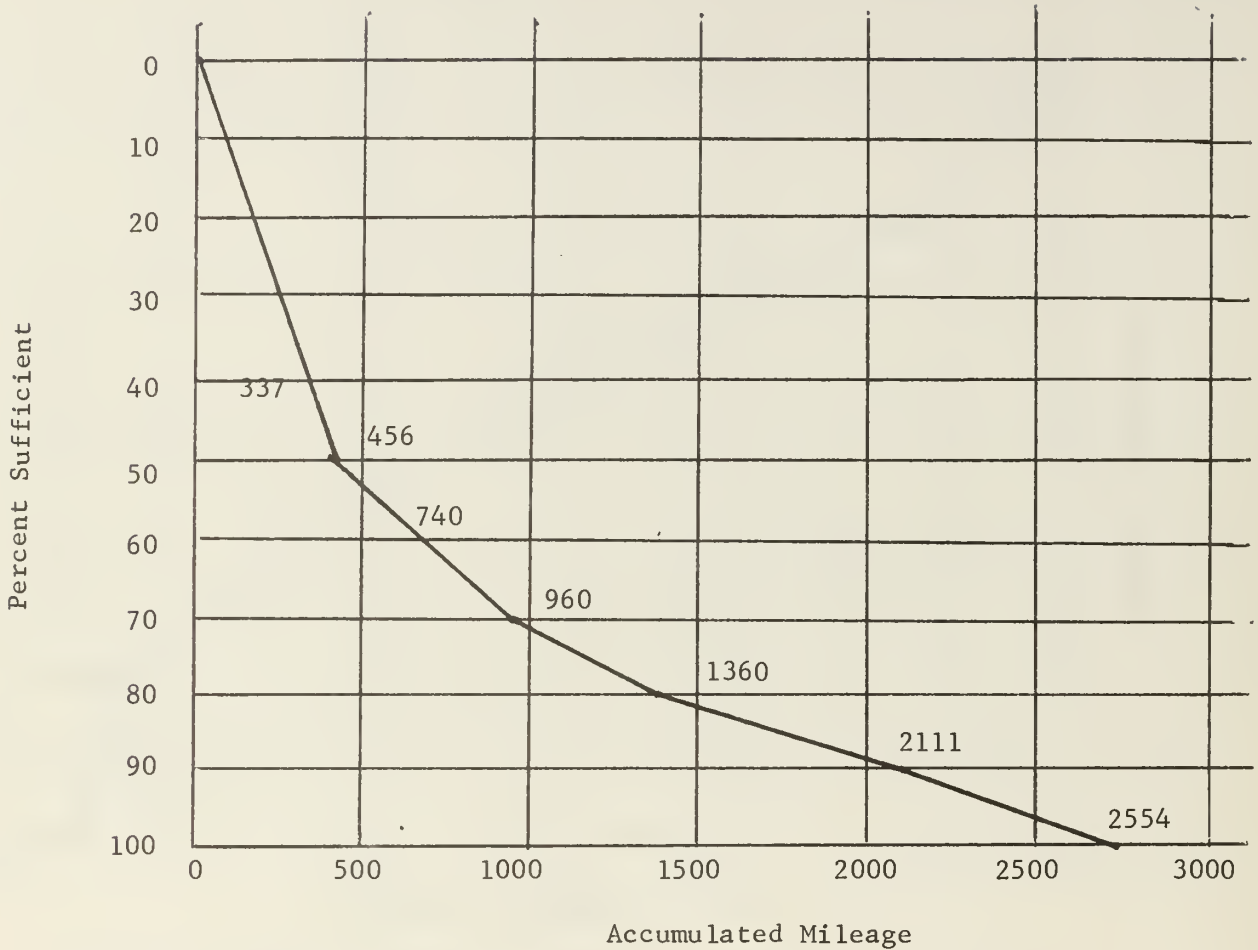


Inclusion 31 shows that of the 1,414 miles of rural primaries for which data was available; 659 miles are deficient - this represents 46 percent of the mileage involved; 1102 miles are less than 60 percent sufficient; 1320 miles are less than 80 percent sufficient; the remaining 94 miles are between 80 and 100 percent sufficient.

Source: Wyoming Highway Department

Inclusion 32

Graphical Sufficiency Rating - South Dakota Secondary



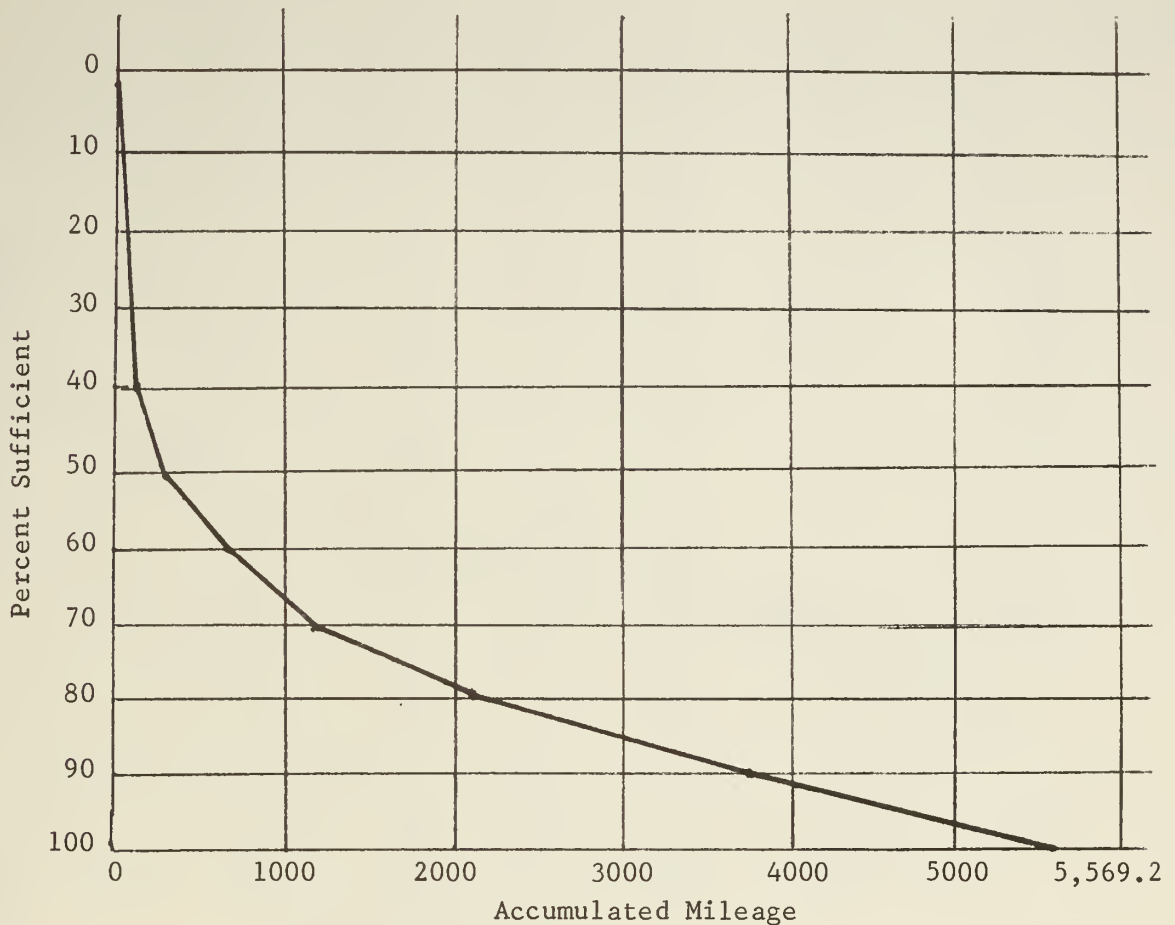
* 218 miles not rated

Inclusion 32 indicates that of the 2,554 miles of South Dakota's secondary highways, 115 miles are less than 40 percent sufficient; 740 miles are less than 60 percent sufficient; 1,361 miles are less than 80 percent sufficient; the remaining 1,193 miles are between 80 percent and 100 percent sufficient.

Source: South Dakota Department of Transportation, Pierre, South Dakota

Inclusion 33

Graphical Sufficiency Rating - South Dakota Primary



**10 miles not rated

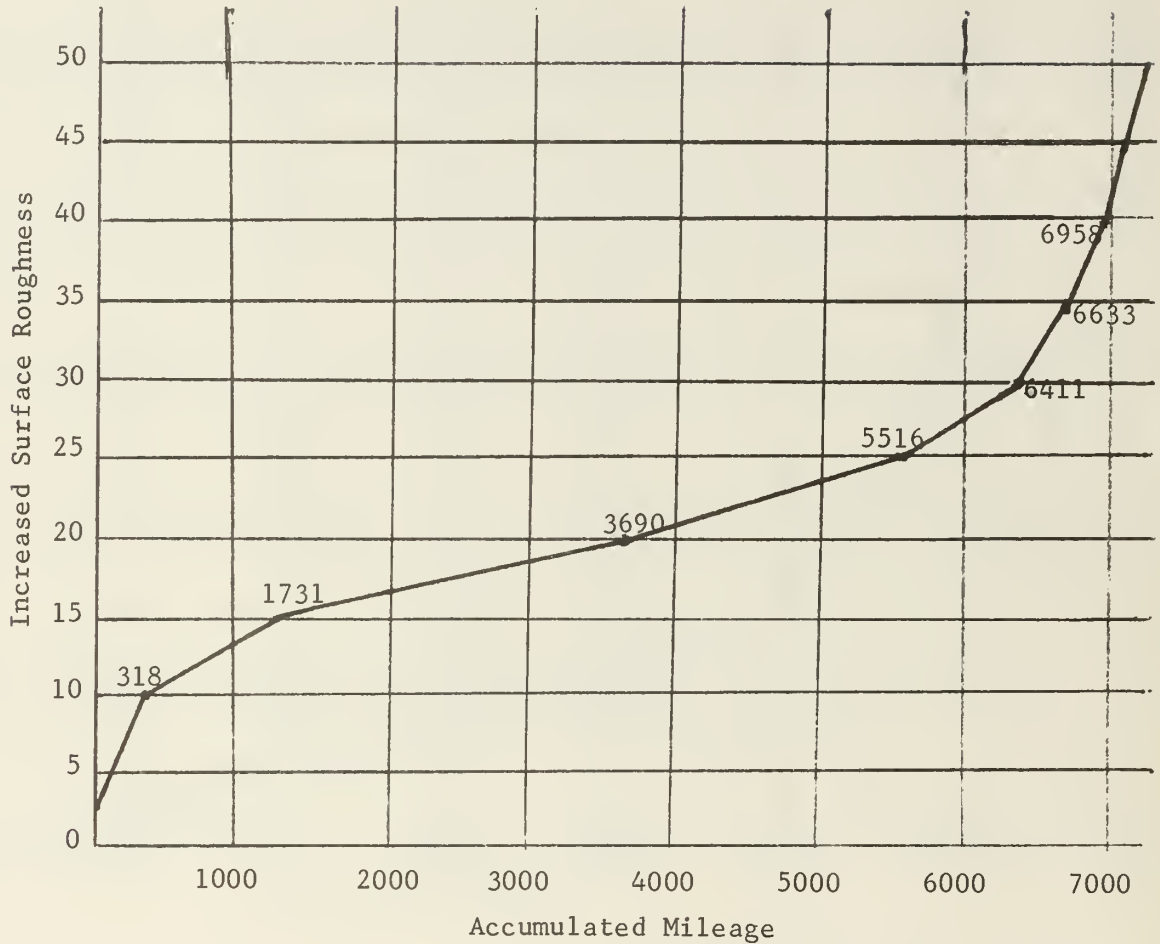
Inclusion 33 indicates that of South Dakota's 5,569 miles of primary highways, 57 miles are less than 40 percent sufficient; 628 miles are less than 60 percent sufficient; 2,190 miles are less than 80 percent sufficient; the remaining 3,379 miles are between 80 percent and 100 percent sufficient.

Source: South Dakota Department of Transportation, Pierre, South Dakota

Inclusion 34

Graphical Sufficiency Rating - North Dakota

Represents total state mileage

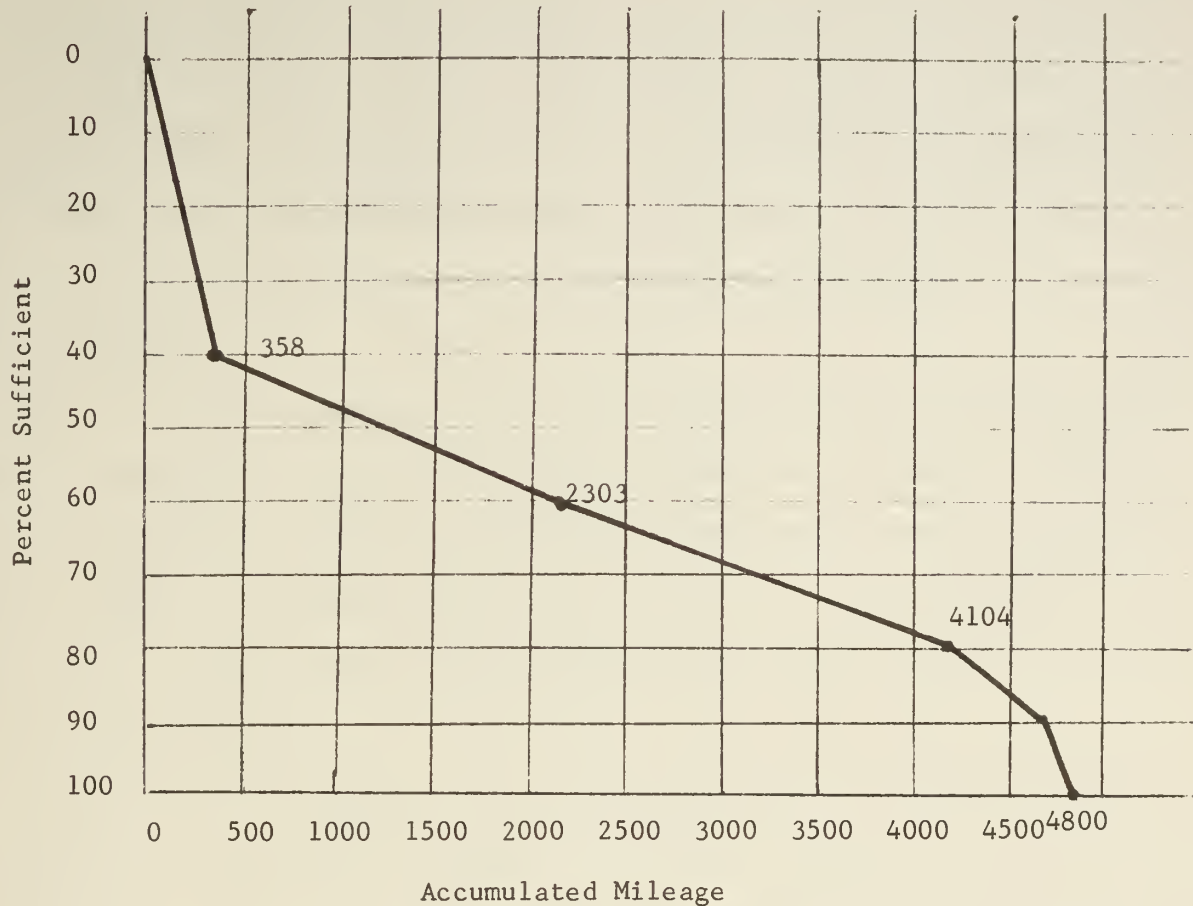


The method by which North Dakota rates the condition of its roads varies considerably from the methods used by the three other states. The Mays Ride Meter Survey conducted in 1973 rated 7,018 miles of highway mileage in the state. The axis which measures the sufficiency percentages in the three other states is replaced by the North Dakota axis which measures increase surface roughness by numeric values that increase from the origin.

Source: North Dakota Highway Department

Inclusion 35

Graphical Sufficiency Rating - Montana Primary



Inclusion 35 shows that of the approximately 4,800 miles of rural highways in Montana, 358.4 miles are less than 40 percent sufficient; 2,304 miles are less than 60 percent sufficient; 4,104 are less than 80 percent sufficient; the remainder being between 80 and 100 percent sufficient.

Source: Montana Department of Highways

Sufficiency Rating for Montana Secondary Highways: Data not available.

S E C T I O N I I I

IMPLICATIONS FOR EASTERN MONTANA

The purpose of this section will be to discuss various issues and alternatives on highway transportation in eastern Montana. Briefly, several abstract data will show the future highway needs in the area; population trends in the area; funding that is available for highway improvement in the area; as well as discussing prospects for improving eastern Montana's highways.

Population Trends

Recent developments in the energy resources industry have enhanced eastern Montana's prospects for general development of the area. In the four state region, eastern Montana is second in population growth only to eastern Wyoming. Presently, there are approximately 95,000 residents in eastern Montana. The economy of the area is closely tied to agricultural interests as well as the burgeoning coal industry.

The shipment of commodities in the eastern Montana area is closely tied to the availability of efficient highways. U. S. 2 is a highway that connects the northern section of the state of Montana with the commodity markets located both to the east and west of the state.

In 1972, 98,831,000 bushels of wheat were produced in Montana. Of this total, 77.6 percent was grown in the U. S. 2 area. Of the 64,013,000 bushels of barley produced in Montana, 82 percent was grown in the U. S. 2 area. Of the 2,586,000 bushels trucked east out of Montana, 1,325,900 bushels or 51.2 percent moved from the U. S. 2 area. Of the 14,974,000 bushels trucked west out of Montana, 9,736,000 bushels or 65 percent was from the U. S. 2 area. Inclusion 36 demonstrates these production and transportation statistics.

Inclusion 36

PRODUCTION, ALL WHEAT, MONTANA 1972 (stated in bushels)

All of Northeast District		35,516,700	
All of North Central		35,677,500	
1/3 of Central		3,300,000	
Northwest District:			
Lincoln County	15,000		
Flathead County	840,800		
Sanders County	74,200		
Lake County	283,800		
		<u>1,213,800</u>	- 80.8% of Northwest Prod.
	Total	<u>76,708,000</u>	
Total Prod. All Wheat Montana		98,831,000	
% available for movement via U.S. 2			77.6%

TRUCKING OF WHEAT FROM MONTANA: (stated in bushels)

From:	<u>East</u>	<u>West</u>
All of Northeast District	1,304,000	1,199,000
All of North Central	15,000	6,641,000
1/3 of Central	5,300	781,000
80.8% of Trucking from Northwest	<u>1,600</u>	<u>1,115,000</u>
	Total	<u>9,736,000</u>
Total wheat trucked from Montana	2,586,000	14,974,000
% trucked from U.S. 2 area	51.2%	65.0%

PRODUCTION, BARLEY, MONTANA 1972 (stated in bushels)

All of Northeast District	13,928,900
All of North Central	31,980,000
1/3 of Central	4,642,967
Northwest District:	
Lincoln County	3,000
Flathead County	1,514,100
Sanders County	88,400
Lake County	<u>334,200</u>
	Total
	<u>52,491,567</u>

Total Prod. Barley, Montana	64,013,000
% available for movement via U.S. 2	82.0%

Source: Montana Agricultural Statistics, USDA

Road Conditions

Approximately 40 percent of the 1800 miles of primary highway in the state of Montana is deficient by the State Highway Department ratings. See inclusion 19 on page 40.

The area's secondary roads are in an advancing state of deterioration and obsolescence. Many of the area's secondary roads were constructed in the 1930's with little improvement since that time. The resulting problems related to road width as well as grade condition are accentuated by the increased use of heavy trucks used in commodity transportation. The problem of "spring thaw" plays havoc with the general condition of the roadways in this area. It is during this time of the year that heavy farm equipment and agricultural supplies must be moved: This results in rapid deterioration of the roadway.

Administrative and Financial Considerations

There are four highway financial districts in the area of eastern Montana. The fiscal year 1976 state construction funds available for obligation for the Federal-aid Interstate system in the six eastern Montana counties involved totals \$816,700 or approximately 15 percent of the total construction funds available. The total amount of funds available for obligation in fiscal year 1976 for construction of Federal-aid primary rural highways is approximately \$3,450,000 which represents about 34 percent of the total construction funds. For fiscal year 1976 there is a total of \$1,128,200 in state construction funds available for secondary highways. This represents about 20 percent of the total state construction highway funds.

According to the Montana Department of Highways Tentative Construction Program for 1976 through 1981, 755.8 miles of state highway in eastern Montana is scheduled for improvement work of some sort. This figure represents construction of Interstate, primary, secondary, urban, safety projects, and off-system

roads. This figure represents about 30 percent of the total construction plans. Presently the Colstrip Economic Growth Center is receiving approximately 26 percent of the total state funds available for economic growth center projects.

The western mountainous region of the state of Montana has considerably more deficient road mileage, coupled with a higher population. Like eastern Montanan's, their concern for improved road service is intense. Traditionally, eastern Montana has had difficulties in competing with the more densely populated areas of the state in terms of legislative considerations as well as general development possibilities.

It would appear that in light of the fact that the highway needs cost about three times more than is available for highway construction, that serious consideration as to the best method of highway finance must be explored. There is considerable sentiment in eastern Montana that more of the revenue that is generated by the State Coal Tax should be spent in eastern Montana, especially for highway construction purposes, than is presently the case.

Curtailement of other transportation facilities in the area including commercial air service, rail service, and an adequate bus service dramatize the importance of eastern Montanan's to unite behind an effort to promote the development of transportation facilities in the area. One effective tool in promoting better highways is the development of concerned associations for the improvement of regional highways. Although several highway associations have been formed in Montana in the past, the effectiveness of these organizations has declined in recent years.

The U. S. 2 Highway Association in North Dakota attests to the significant contributions that lobbyist-type groups of this nature can play in developing highways on a regional basis. A representative of the U. S. 2 Highway Association claims that the effectiveness of their organization is linked with the

fact that their organization promotes only one interest, this is the improvement of Highway 2. The association attempts to work with the Highway Department and Highway Commission in promoting legislation that is mutually beneficial to the Highway Department and to the U. S. 2 organization. The group maintained steady contact with the Highway Commission and promoted the rescheduling of reconstruction of U. S. 2 into a four lane highway. By 1985, U. S. 2 will be a completed four lane highway through North Dakota. Similar commitments by Montanan's, and eastern Montanan's in particular, could result in more progressive highway administration action.

Taking Action

In light of the recent development of energy resources in eastern Montana, new highways and improved highways must help to ease the over-use of an already inefficient highway system. As the population of the area increases, so too will increase the need for improved highways.

When it becomes apparent that a system of administering and financing highway improvements in a state which is totally dependent on those highways, cannot cope with the policy of providing an efficient highway network to its citizens, serious consideration should focus on the very efficacy of that system. If current state financial aid does not meet the needed requirements for better roadways, then alternative methods of financing must be proposed. In determining alternative methods of financing roadways, the population of the affected areas should face the question of whether they are willing to pay for the desperately needed improvements, on a state level.

In trying to solve these basic problems, eastern Montanan's should take the lead in creating an effective highway users lobbying group, not for the purpose of attaining incremental gains on a piecemeal basis, but rather a commitment to the region as a whole must be met. A regional highway users

association would combine the best efforts of all individual citizens, farmers, businessmen, and political operatives. A coalition in the State Legislature as well as an effective voice on the State Highway Commission will help the State of Montana take a new look at the direction in which the present means of highway improvements are taking the state.

If one concurs with the basic assumption presented at the outset of this project; that economic development of this area is contingent upon the development of an efficient transportation network, then the objectives of an effective highway user association can be handily demonstrated.

As the Interstate highway construction is inching toward completion in Montana, the citizens of eastern Montana must demonstrate their willingness to work for improved primary and secondary highways with the same priority that has been given to the Interstate program.

Because loose-knit organizations are generally destined to failure, it is imperative that administrative organization be considered and acted upon prior to the involvement of interested and well intentioned persons. To prevent the deterioration of the highway associations, a regional highway user association must coordinate the actions of the various sub-regional highway groups. The overall concern that must be met is that the development of regional transportation transcends purely local interests.

S E C T I O N I V

This section will be concerned mainly with the presentation of various suggestions that should be considered. The suggestions represent conclusions made by the author after conducting this study.

POLICY AND PROCEDURAL RECOMMENDATIONS

In an attempt to promote the improvement of rural highways in eastern Montana, the Economic Development Association of Eastern Montana should act as the catalyst in the development and organization of various highway user associations. Several highway user associations in eastern Montana that have been active in the past, and may be active in the future are: Highway 200 Association; U. S. 2 Association; U. S. 212 Association; International North - South Highway Association; Powder River Trail Association; Central Canadian, United States, Mexican International Highway Association; and Highway 13 Association.

In developing the regional association for improving highways, EDAEM should consider the following action:

1. Prepare and present a program to local groups interested in forming highway associations. The program should discuss road conditions, prospects for improvement throughout the region, as well as provide help in organizing the groups at a local level.
2. Prepare pamphlets and other publications that will demonstrate the need to unite behind a regional highway users association for the express purpose of improving eastern Montana's highway network.
3. The objectives of the region wide organization should be based upon the premise that the sole purpose of the organization's existence is to seek improvement of eastern Montana's highways.
4. The highway association activity should have a regional nucleus in eastern Montana, yet long term goals might incorporate a state wide venture in the development of highways.
5. The highway association that will be coordinated by EDAEM should be involved in legislation affecting highway development in eastern Montana.

The Economic Development Association of Eastern Montana should be the first to involve itself in the development of the highway associations because it is

currently an active and organized group, its boundaries are defined, and it is a well known organization in eastern Montana.

It is the author's consideration that there are several recommendations that should be made in the spirit of helping develop the transportation facilities available to eastern Montana. EDAEM should weigh the following recommendations in the developing of a region wide highway association network.

1. That a political coalition of highway users in eastern Montana be formed by the State Representatives and State Senators for the purpose of promoting highway transportation issues.
2. That piecemeal approaches to highway improvement refuse to recognize the overall picture of the transportation scene in eastern Montana. To promote this thought, EDAEM should consider the recognition of the need for, and adoption of a plan to coordinate all transportation facilities throughout the region and state. That this interest be expressed to the Montana State Legislature in the form of a resolution.
3. That EDAEM support legislation in the 1977 Biennial Legislature that amends the 1975 Senate Bill No. 87 so that 25 percent of the State Coal Tax revenues may be used for the development of transportation facilities for impact areas, and that the definition of impact areas should be reconsidered so as to include all research and development population impacts that are related to the development of coal in eastern Montana.
4. That communities and their leaders unite behind an effort to create influential highway associations that will serve the interests of this region.
5. That no money in the State Highway Fund be used for other than highway construction, maintenance, or highway safety purposes.
6. That there appears to be a need for the reconsideration of the accuracy and efficiency of Montana's highway sufficiency ratings, so as to be more meaningful to the public, as well as being more closely tied to the construction and improvement prospects of the state highway system.

RECOMMENDATIONS FOR FUTURE POSSIBLE RESEARCH

After researching highway transportation facilities in rural America and discussing the implications of transportation policies on eastern Montana, it is the author's consideration that further research in the following areas be undertaken.

1. The effect of natural resource development on rural populations.
2. Highway financing possibilities for meeting future needs in construction of roads in service to rural America.
3. The effect of voluntary highway associations on the development and improvement of eastern Montana's road network.
4. Development of a multi-model transportation plan for the state of Montana.
5. Administration of highway association groups.
6. The politics of highway service to rural Montana.
7. Commercial transportation abandonment in rural America.
8. Improving substantive highway information service to Montanan's.

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This report was completed by a WICHE intern. This intern's project was part of the Resources Development Internship Program administered by the Western Interstate Commission for Higher Education (WICHE).

The purpose of the internship program is to bring organizations involved in community and economic development, environmental problems and the humanities together with institutions of higher education and their students in the West for the benefit of all.

For these organizations, the intern program provides the problem-solving talents of student manpower while making the resources of universities and colleges more available. For institutions of higher education, the program provides relevant field education for their students while building their capacity for problem-solving.

WICHE is an organization in the West uniquely suited for sponsoring such a program. It is an interstate agency formed by the thirteen western states for the specific purpose of relating the resources of higher education to the needs of western citizens. WICHE has been concerned with a broad range of community needs in the West for some time, insofar as they bear directly on the well-being of western peoples and the future of higher education in the West. WICHE feels that the internship program is one method for meeting its obligations within the thirteen western states. In its efforts to achieve these objectives, WICHE appreciates having received the generous support and assistance of the Economic Development Administration; the Jessie Smith Noyes Foundation; the National Endowment for the Humanities; the Wyoming Office of Manpower Planning; and of innumerable local leaders and community organizations, including the agency that sponsored this intern project.

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